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A SCALE, BASED ON THE WORK AT ELLIS ISLAND, FOR ESTIMATING MENTAL DEFECT

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From different sources have come many requests for a description of the tests worked out and conclusions reached in the practical work that has been done at Ellis Island on mental defectives. For this reason I present this paper, based on tests which I have made on over 4,000 suspected defectives in the last eighteen months and many more made by my associates. It must be remembered that our cases were suspected of being deficient and were therefore not representative of the normal, although all were considered sufficiently near the required standard to be allowed to pass, except about 400 certified as feeble-minded and (in a few cases) as imbeciles. The tests, questions and other details of examination were arrived at as a result of work on persons that were less bright than the average of the various races (illiterates) from which they came. It is evident, therefore, that if this scale errs at all it is on the conservative side and that anyone tested by it receives more than fair treatment. Some may be interested to know that the sole work of one officer of the Public Health Service at present is to find the limitations of normal illiterate aliens—just what they can and cannot do. It is possible, then, that some more severe tests, which will be more in keeping with the actual capabilities of the persons on whom they are to be tried, will be added to those in present use. Some of the questions used by us which appear in the following standard of tests were taken from the questionnaire of the psychologist, Binet, to whom we are indebted.

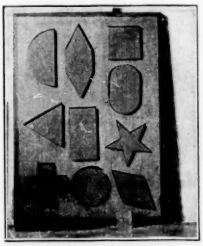

Fig. 1.—Seguin's form-board, 16 by 22 inches in area, 1½ inches thick and made of soft wood. The pieces are 1 inch thick and are set into sockets ½ inch deep, therefore they project out of the board ½ inch. The time, and especially the improvement time, is most important in working with this board.

A SCALE FOR THE ESTIMATION OF THE DEGREE OF MENTAL DEFICIENCY IN ILLITERATES AND OTHERS

Tests applicable to the first two years of life have not yet been fully worked out by us. The child should:

At 3 Years

1. Recognize toys and simple objects.
2. Point to ear, nose or lips.
3. Repeat two figures, as 7, 5.
4. Recognize objects in child picture-books with which it is familiar.
5. Know own name.

At 4 Years

1. Put in some of the pieces in Seguin's form-board (Fig. 1).
2. Do line *a* of cube imitation test or touch any two blocks (Fig. 2).
3. Repeat three figures as 7, 9, 5.
4. Recognize ring, pencil, shoe, hat.
5. Know own sex.

At 5 Years

1. Put all the pieces in Seguin's board in three minutes (Fig. 1).
2. Do line *b* of the cube test or touch any three blocks (Fig. 2).
3. Count any number of the examiner's fingers.
4. Copy a square and circle.
5. Obey two commands as "Shut the door and hand me the pencil."

At 6 Years

1. Do "imbecile test" in five minutes with less than six mistakes (Fig. 3).
2. Do line *c* of the cube test (Fig. 2).
3. Build structure with four blocks after seeing the same structure twenty-five seconds.
4. Know right or left hand or ear.
5. Know own age.
6. Obey three commands, "Open door, shut window and bring book."
7. Know purpose of domestic animals that are familiar.

At 7 Years

1. Do "geographical" test, after being shown, in five minutes (Fig. 4).
2. Do "imbecile" test with more facility than at 6 years of age (Fig. 3).
3. Imitate construction-block structure, using five blocks.
4. Copy a diamond with a lead-pencil.
5. Repeat four figures, as 9, 3, 7, 4.
6. Count readily from 1 to 20.
7. Name the action shown in simple picture: as "driving horses."

At 8 Years

1. Do five-block frame test (Healy's) in five minutes (Fig. 5).
2. Do line *d* of the cube test (Fig. 2).
3. Count from 20 to 1 with not over two errors.
4. Know the difference between water and milk, horse and cow, if familiar.
5. Repeat five figures, as 7, 3, 5, 9, 2.
6. Recognize primary colors, red, blue, green and yellow.

At 9 Years

1. Do diamond-frame test in five or ten minutes (Fig. 5).
2. Put cut-out sections into horse picture in five minutes (Fig. 6).
3. Put pieces into Seguin's board in twenty seconds (Fig. 1).
4. Know the date.
5. Name the days of the week and tell the time approximately.
6. Arrange five cubes of the same color and size, weighing 9, 12, 15, 18 and 21 gm., in the order of their weights.

At 10 Years

1. Do "moron" test inside of ten minutes (Fig. 7).
2. Perform the details of the "visual comparison" test (see *New York Med. Jour.*, Sept. 13, 1913, p. 522).

3. Name the months of the year.

4. Do simple addition of like followed by unlike numbers, as: 6 and 6 = ? 6 and 5 = ? 5 and 5 = ? 5 and 4 = ? up to and including 8 and 8 = ? 8 and 7 = ?

5. Do simple addition of two numbers, one of which is increased each time by 1, as: 7 and 1 = ? 7 and 2 = ? 7 and 3 = ? 7 and 4 = ? 7 and 5 = ? etc., to 7 and 8 = ?

6. Name the days of the week backward.

At 11 Years

1. Do c line of cube test without being shown over five times (Fig. 2).

2. Repeat six figures, as: 6, 9, 2, 5, 7, 3.

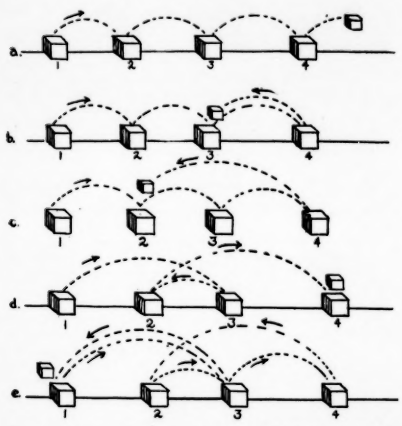

Fig. 2.—Knox's cube imitation test. Four 1-inch cubes, 4 inches apart, are fastened to a piece of thin boarding. The movements and tapping are done with a smaller cube. The operator moves the cube from left to right facing the subject, and after completing each movement, the latter is asked to do likewise. Line *a* is tried first, then *b*, and so on to *e*. Three trials are given if necessary on lines *a*, *b*, *c* and *d*, and five trials if needed on line *e*. To obtain the correct perspective the subject should be two feet from the cubes. The movements of the operator should be slow and deliberate.

3. Of a simple story of five details remember at least three.

4. Tell difference between ice and glass, the feet of horses, cows and dogs, or other objects chosen from the subject's experience.

5. Give an intelligent account of occupation for the past year.

6. Concrete subtraction of simple numbers from 10, as 10 eggs — 3 eggs = ?

At 12 Years

1. Do "easuist" test in five minutes with sensible mistakes if any (Fig. 8).

2. See absurdities, as: "A man walked down the street swinging a cane with his hands in his pocket." "Man cut into ten pieces, suicide?"

3. Syllogisms, as: "I am taller than my brother and my brother is taller than my father. Which of us is the tallest?"

4. Story solution, as: "A man was walking in the woods and he saw something hanging from a tree that frightened him; he ran back to the village and told the police. What did he see?"

5. Concrete subtraction of simple numbers from 20; as 20 cents less 4 = ?.

6. Divide twenty apples into four equal parcels; how many will be in each?

At from 13 Years Onward

1. Do "feature profile" test in ten minutes (Fig. 9).

2. The picture of a ship pasted to a board and cut into ten equal-sized pieces of the same shape, should be properly assembled in ten minutes. The pieces are all cut vertically and parallel to each other (Glück).

3. Obey four commands.

4. Problem: "My head is to my hat as my hands are to my ————?" (gloves).

5. Define justice, pity, truth, goodness and happiness.

6. Combine factors in concrete addition, as: 1 horse and 1 man have how many legs? 1 horse and 1 man and 1 chicken? 2 horses and 1 man and 2 chickens?

MAKE-UP TESTS FOR ADULTS

These are to be used on those who, judged by the preceding tests, are subnormal, but not less than 7 years old mentally.

1. Put the four pieces into Gwyn's "triangle" three times in forty-five seconds (*A*, Fig. 10).

2. Put the pieces into Kempf's "diagonal" inside of three minutes (*B*, Fig. 10).

3. Put the pieces into the Fernald board inside of five minutes (*C*, Fig. 10).

4. Count 60 dots, each about ⅛ inch in diameter, arranged in ten parallel lines.

5. Give an intelligent and connected account of the technicalities of the previous occupation.

6. Permit the subject to choose a topic about which he says he is familiar and allow him to discourse on it at length. (If this is done well and the subject uses more than fifty words in his description the examiner should be particularly sure of his ground before certifying the case.)

7. The ink-blot imagination test. (Soon to appear in *Medical Record*.)

This entire examination presupposes that the subject has never been taught and that he has only acquired knowledge by the experiences of every-day life. The performance tests especially are not dependent on any previous experience, but the ability to do them is based on the inherent or native power to surmount slight obstacles with which the subject is born and they are applicable to the educated as well as to the illiterate. The power itself is based on reasoning, judgment, sense of form, perseverance, attention and cooperation, nearly all of which are essential to success in life.

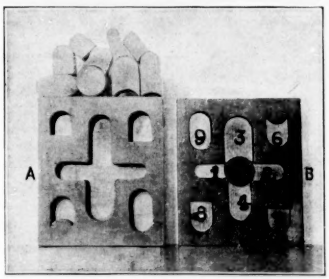

Fig. 3.—Knox's "imbecile" test. Board is 5 by 7, and 1 inch thick with a ¼-inch wooden back to prevent the pieces from falling through. The test is made of hard wood and the pieces fit easily. Sections 4, 6, 7, 8 and 9 are all of the same width. A fraction method of scoring is in use, each piece being numbered. *A*, sections out; *B*, sections in place as they appear after the correct performance of the test.

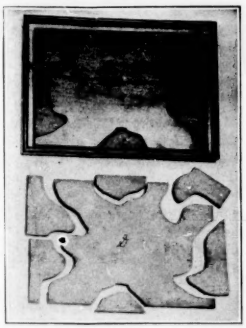

Fig. 4.—The "geographical" or jigsaw test. Pieces are ¼ inch thick and of hard wood. It is kept in a shallow box when not in use to prevent the loss of the sections. The fraction method of scoring is used here, each piece being numbered. Time and improvement time are recorded.

For scientific purposes and for the sake of certain fairness to the alien, some of us use, unofficially, the following method of grading:

Age At or Over	Mental Development Years	Classification
6	Practically none	Low-grade idiots
6	1	High-grade idiots
8	2	Low-grade imbeciles
10	2 to 4	Middle-grade imbeciles
12	4 to 6	High-grade imbeciles
12	6 to 8	Low-grade morons
14	8 to 10	High-grade morons

By reducing the higher ratios of physical to mental years by a process of simple proportion, one may more

Fig. 5.—*A*, Healy's five-block frame test. Frame is 4 by 5 by ¼ inches and is of hard wood. The test must be made accurately to scale as shown here, else it will lose some of its usefulness; the blocks should be out of the frame when the subject first sees and attempts it. *B*, Knox's "diamond" frame test. It measures 5 inches on each side, is 1 inch thick, and is made of hard wood with a cloth or wooden back. The six sections are cut on the "bias." Time and improvement time are the important elements here; no scoring has been attempted.

correctly grade the younger cases and will not, for example, rate a child of 6 who does the 3-year requirements, as the middle-grade imbecile which, on casual consideration, he might seem to be. This is done as follows: Take one of the seven primary classes in the preceding tests, for instance, No. 6, and make a proportion with the child's age and x as, 12:7::6: x; thus x = the mentality of 3½ years. Therefore a

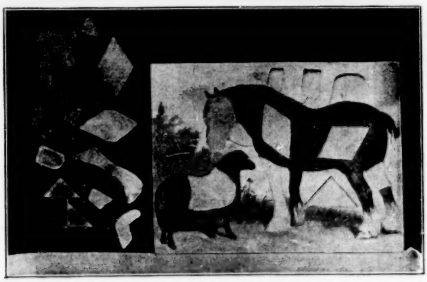

Fig. 6.—The horse picture used by Dr. Gwyn of the Public Health Service (before this by Healy) in his original investigations with defective aliens. It consists of a picture from a child's book, 8 by 10 inches, pasted on a piece of boarding ¼ inch thick with sections cut out as shown. The most difficult part of the test is the filling of the space occupied by the two right-angled triangles. There should be a wooden back on the test to prevent the pieces from falling through.

child of 6 who does the 3-year requirements is approximately a low-grade moron and not a middle-grade imbecile.

For the purpose of classification the scale and method of grading or classifying which is here given may be used exactly as it stands, but in handling defectives from a legal point of view conservatism must always be the watchword; in short, the examiner must be certain that the subject has actually reached his upper limit of ability and then leave a margin for possible improvement at a later examination if it should be necessary to make one. Lay people are often willing to believe that an unprepossessing person is defective, while one of equal intellect, pleasant expression and regular features might be considered normal by them. Looks are certainly deceiving when one is attempting to diagnose deficiency; (1) some who look bright are in reality defective; (2) some who look defective are so, and (3) some who look defective prove on examination to be of normal intelligence. When one goes above the imbecile grades he has gone beyond the point at which there is a distinct and more or less pathognomonic physiognomy. It is therefore necessary to obtain the mental content by tests and questions, and in no case can one say of a bright and handsome person, "that man has a normal mind." The one characteristic that I have seen more often than any other among defectives, as regards their faces, has been asymmetry, which of course is not at all uncommon among normals.

In grading defectives by the scale it is not always an advantage to begin at the beginning. It is just as well to start from the point at which, in the examiner's estimation, the subject can accomplish something; if he

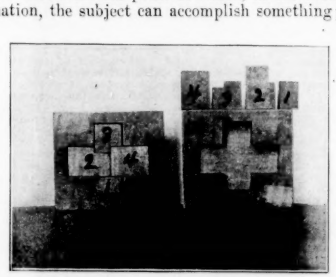

Fig. 7.—Knox's "moron" test. It is of wood and is 4½ by 4¾ inches with a wooden back. The four blocks fit easily and smoothly into the frame. The test should not be assembled when the alien first sees it and he should be made to do it three times in order to rule out the element of accident and to note the improvement time. *A*, assembled; *B*, with pieces out.

fail there, go lower on the scale; if not, go higher until his limit has been reached. When it seems that the subject has reached his limit select isolated questions from the higher years and credit him a point for each one that he meets successfully. If now he has not reached the normal standard for his age and the examiner still has doubt that his subject is defective, he may hold him for further examination on another day, at which time, in the case of 12-year-olds or those younger, or in the make-up tests when the subject is over 12 and according to the scale not below 7 mentally, the same tests may be given. If he were lower than this he could not possibly meet the make-up requirements. If an adult meets the make-up requirements it shows that he has profited by his experience, and if, when he is given the make-up tests repeatedly, he improves by performing them in a shorter length of time at each trial, it shows rather conclusively that the poor performance at the first sitting was due to physiologic emotional causes and he should therefore be given the benefit of the doubt. An isolated instance may be taken for illustration.

A fairly normal-looking illiterate alien, aged 20, was selected from the first line-inspection because he added simple numbers poorly; in the primary examination or "sifting" room it was found that he was unable to perform the *d* line of the cube test and that while he could count forward from 1 to 20, he could not count from 20 to 1. He was accordingly detained and a secondary examination card bearing the result of the first test was made out for him. On the following day he was brought to the secondary examination room (or psychologic laboratory) and was tested by the illiterate scale. It was found that he could do all the 7-year requirements, only one (No. 6) of the 8-year elements, No. 5 of the 9-year elements, Nos. 2 and 3 of the 10-year requirements and No. 6 of the 11-year requirements. Now since there are six elements in the year above the one he did successfully, and he did without error five of the requirements of various years above the 7-year tests, he was rated as $7\,^{5}/_{6}$ years mentally by the illiterate scale.

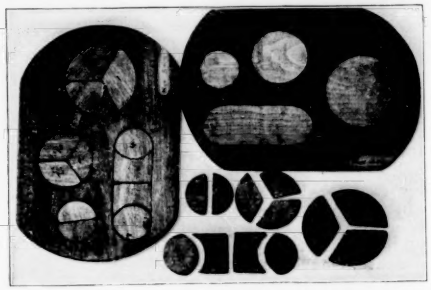

Fig. 8.—Knox's "casuist" test. The frame is 13 by 10 by ½ inches and is made of hard wood. It consists of twelve pieces that fit into the solid wood frame which has a wooden back. Each piece is numbered so that the fraction system of scoring may be used. The numerator of the fraction indicates the piece misplaced and the denominator the space (numbered like the piece that belongs in it) into which it was erroneously placed; roman numerals to the right of the fraction indicate the number of times the mistake was repeated. For instance, if one of the "3's" is put into one of the "4" spaces four times this fact would be recorded thus, ¾ IIII; if a section as "5" is in its correct receptacle, but with faces reversed, this fact is recorded as 5—, if turned sideways, 5′. Time and improvement time are accurately recorded by a stop watch. The most important thing to consider when using this test is the character of the mistakes made, whether absurd or "sensible." Note that the sections numbered 4 are neither circular nor semicircular in outline but that the two faces of each of these pieces form arcs of different-sized circles. A rubber stamp outline of the test is used by some to record mistakes graphically.

Fig. 9.—The "feature profile" test. This is a profile head, made of hard wood, ½ inch thick and about 6 by 10 inches in its greatest measurement. There are seven pieces exclusive of the main piece, the eye, nose and mouth each comprise one section, and the ear is made up of four sections which can be placed in only one way to make a complete ear. The test presupposes the ability to read a diagram and it is therefore more difficult than at first appears. The test should not be assembled when the subject first sees it. It is our highest and most difficult performance test and yet it is eminently fair because every one has seen a human head; the subjects are told "this is a head." (This test was devised by Dr. Kempf of the Public Health Service and myself.)

On the following day he was examined again and at that time he only accomplished one of the elements that he failed on before, and that was No. 3 of the 8-year elements; of the make-up tests he succeeded in doing only No. 1. This alien was certified by us as "feeble-minded" and was deported by the Immigration Department. The fact that he was actually 20 years old and passed, at first, the $7\,^{5}/_{6}$-year requirements and later two more elements from the higher ages, making him finally $8\,^{1}/_{6}$ years mentally, would permit him to come under the scientific (not legal) classification of high-grade moron. He would be low in this grade, however,

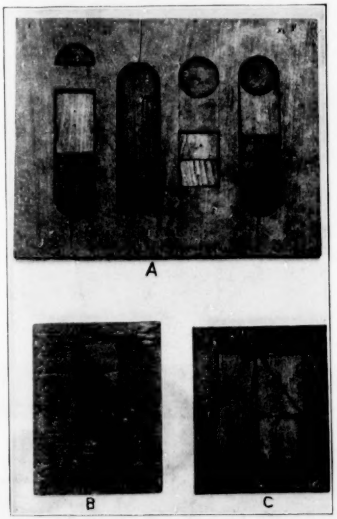

Fig. 10.—The three performance-tests used in the "make-up tests" for adults. *A*, the Fernald board; *B*, Gwyn's triangle; *C*, Kempf's diagonal. The principles underlying these tests are, in general, the same as those on which our other wooden performance-tests are based. Scoring may be by a rubber stamp by which a miniature impression is made of the assembled test, each piece being numbered, and all the pieces exactly alike, such as the circular pieces in the Fernald board, being numbered alike. The fraction method answers as well. To show the method used by the subject, write in space in which it was placed the number of misplaced pieces and the number of its misplacements. Special signs may be devised by the operator to fit each indication.

since the requirements are that the one so classed must be actually 14 years or older and from 8 to 10 mentally.

To illustrate the other possibility in the case, let us suppose that the alien passed the tests as he did up to the conclusion of the first secondary examination when he was found to be $7\,^{5}/_{6}$ years mentally, but on his second and last secondary examination he had done all the 8-year elements and perhaps three or four of the make-up tests with some degree of facility. In such a case we would in all probability have allowed the alien to enter as somewhat defective, but too bright to certify

for legal purposes as a deficient. This latter is what is meant by "giving the alien the benefit of the doubt."

Practical experience has shown that in the examination of suspects in the primary sifting-room, after the line inspection, tests must be selected from the scale that would ordinarily be easily accomplished by 8- to 10-year-old normals. This simplicity of the tests offsets the mental stress that will always be inevitable under such circumstances. The tests that have proved of the most value for adults in this sifting process are elements 1, 2 and 3 (Healy frame test, *d* line of cube test and counting from 20 to 1) of the 8-year requirements and 4 and 5 of the 10-year requirements, which consist of simple addition.

The following cases are the recorded ones on which this scale for illiterates is based, and constant reference to the scale is necessary to see just how many could or could not do the various things expected of them. It will be seen for instance that not all the 3-year-olds did all of the 3-year requirements, or rather, not all were asked to do them, therefore the number of children doing the first element differs from the number doing

TABLE 1.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 3

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	24	1	0	20	4
Hebrew	16	1	0	16	0
Polish	21	1	3	21	7
Russian	23	1	5	17	1
Italian	24	2	3	17	4
Hebrew	29	2	0	29	0
Polish	16	2	5	4	7
Russian	21	2	7	10	4
Italian	17	3	1	16	0
Hebrew	9	3	0	9	0
Polish	17	3	6	11	0
Russian	9	3	3	6	0
Italian	13	4	0	13	0
Hebrew	6	4	1	5	0
Polish	9	4	1	8	0
Russian	11	4	2	9	0
Italian	34	5	1	33	0
Hebrew	20	5	0	20	0
Polish	12	5	1	11	0
Russian	18	5	2	16	0

TABLE 2.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 4

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	30	1	7	23	0
Hebrew	26	1	4	22	0
Polish	17	1	6	11	0
Russian	14	1	4	10	0
Italian	24	2	2	20	2
Hebrew	18	2	0	14	4
Polish	12	2	2	8	2
Russian	16	2	1	11	4
Italian	6	3	1	4	1
Hebrew	8	3	2	4	2
Polish	7	3	2	2	3
Russian	5	3	1	3	1
Italian	61	4	9	52	0
Hebrew	42	4	6	36	0
Polish	25	4	12	13	0
Russian	24	4	11	13	0
Italian	37	5	0	37	0
Hebrew	19	5	1	18	0
Polish	14	5	3	11	0
Russian	7	5	2	5	0

TABLE 3.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 5

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	61	1	21	32	8
Hebrew	42	1	9	26	7
Polish	8	1	1	7	0
Russian	12	1	2	6	4
Italian	74	2	13	52	9
Hebrew	33	2	1	27	5
Polish	21	2	1	13	7
Russian	14	2	3	6	5
Italian	48	3	3	45	0
Hebrew	15	3	0	15	0
Polish	12	3	3	9	0
Russian	9	3	1	8	0
Italian	4	4	1	3	0
Hebrew	9	4	2	7	0
Polish	5	4	0	5	0
Russian	1	4	0	1	0
Italian	12	5	3	9	0
Hebrew	6	5	1	4	1
Polish	4	5	0	3	1
Russian	3	5	1	1	1

TABLE 4.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 6

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	48	1	5	8	35
Hebrew	27	1	3	14	10
Polish	39	1	9	20	10
Russian	24	1	4	12	8
Italian	54	2	13	41	0
Hebrew	38	2	7	23	8
Polish	24	2	2	11	5
Russian	31	2	5	25	1
Italian	12	3	2	9	1
Hebrew	4	3	1	2	1
Polish	7	3	0	7	0
Russian	0	3	0	0	0
Italian	72	4	7	65	0
Hebrew	43	4	8	35	0
Polish	24	4	5	19	0
Russian	21	4	3	18	0
Italian	71	5	11	60	0
Hebrew	42	5	8	34	0
Polish	35	5	7	28	0
Russian	18	5	2	16	0
Italian	9	6	2	4	3
Hebrew	5	6	1	3	1
Polish	3	6	1	2	0
Russian	6	6	3	1	2
Italian	14	7	1	5	8
Hebrew	6	7	0	4	2
Polish	14	7	2	9	3
Russian	9	7	1	7	1

TABLE 5.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 7

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	20	1	2	13	5
Hebrew	11	1	0	5	6
Polish	9	1	2	7	0
Russian	3	1	0	2	1
Italian	71	2	4	66	1
Hebrew	40	2	1	35	4
Polish	17	2	3	7	7
Russian	9	2	2	7	0
Italian	10	3	1	7	2
Hebrew	8	3	3	4	1
Polish	1	3	0	1	0
Russian	7	3	2	3	2
Italian	26	4	5	7	14
Hebrew	18	4	3	4	11
Polish	21	4	5	3	13
Russian	16	4	7	1	8
Italian	29	5	12	9	8
Hebrew	32	5	5	23	4
Polish	12	5	6	1	5
Russian	7	5	1	2	4
Italian	78	6	2	67	9
Hebrew	47	6	0	42	5
Polish	76	6	1	69	6
Russian	39	6	3	30	7
Italian	74	7	5	60	9
Hebrew	61	7	2	52	7
Polish	8	7	1	1	6
Russian	15	7	1	4	10

TABLE 6.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 8

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	65	1	12	45	8
Hebrew	54	1	7	33	14
Polish	46	1	9	21	16
Russian	28	1	15	12	11
Italian	48	2	11	3	34
Hebrew	31	2	13	8	10
Polish	24	2	6	4	14
Russian	27	2	14	7	6
Italian	32	3	15	12	15
Hebrew	16	3	3	6	7
Polish	14	3	1	13	0
Russian	11	3	4	7	0
Italian	31	4	2	22	7
Hebrew	20	4	4	12	4
Polish	6	4	1	4	1
Russian	19	4	3	10	6
Italian	9	5	1	6	2
Hebrew	11	5	2	9	0
Polish	6	5	0	5	1
Russian	10	5	3	4	3
Italian	9	6	3	6	0
Hebrew	7	6	2	5	0
Polish	1	6	0	1	0
Russian	9	6	2	7	0

the second element. This result was because it was not foreseen when the work was begun that a measuring scale would be developed. To make the accompanying tables clear, the first section of the table of 3-year olds will be explained in some detail. All the children comprised in this section were Italians, Hebrews, Poles and Russians aged 3, that is, between their third and fourth birthdays. "El" in the heading refers to the element in the scale on which the stated number of children were tested; for instance, twenty-four 3-year-old Italians were tested in the recognition of toys or other simple commonplace objects (No. 1 of the 3-year requirements in the scale). Twenty recognized them, four did so with some difficulty and none failed altogether. On reference to the scale it will be seen that Element 2 of the 3-year test, requires the child to be able, at command, to point to his ear, nose or lips; Element 3, to repeat two figures after the examiner. This follows through the various elements and years of the scale.

TABLE 7.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 9

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	21	1	3	11	7
Hebrew	13	1	5	4	4
Polish	16	1	2	9	5
Russian	12	1	0	5	7
Italian	8	2	1	5	2
Hebrew	3	2	0	2	1
Polish	5	2	1	1	3
Russian	2	2	0	1	1
Italian	46	3	6	40	0
Hebrew	29	3	11	18	0
Polish	35	3	9	26	0
Russian	17	3	4	13	0
Italian	54	4	19	35	0
Hebrew	31	4	2	29	0
Polish	26	4	15	11	0
Russian	34	4	21	13	0
Italian	52	5	18	34	0
Hebrew	35	5	6	29	0
Polish	25	5	6	19	0
Russian	16	5	3	13	0
Italian	46	6	8	27	11
Hebrew	17	6	5	6	6
Polish	10	6	5	5	2
Russian	14	6	3	4	7

TABLE 8.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 10

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	28	1	6	20	2
Hebrew	13	1	1	7	5
Polish	18	1	4	7	7
Russian	21	1	3	7	11
Italian	10	2	0	7	3
Hebrew	6	2	0	6	0
Polish	17	2	1	14	2
Russian	11	2	0	9	2
Italian	26	3	7	16	3
Hebrew	13	3	5	7	1
Polish	21	3	6	9	6
Russian	14	3	4	5	5
Italian	64	4	2	56	6
Hebrew	81	4	3	71	7
Polish	75	4	1	70	4
Russian	42	4	2	31	9
Italian	28	5	1	22	5
Hebrew	41	5	0	41	0
Polish	65	5	2	60	3
Russian	48	5	0	41	7
Italian	14	6	1	8	5
Hebrew	12	6	0	10	2
Polish	8	6	0	7	1
Russian	19	6	2	10	7

TABLE 9.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 11

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	17	1	3	6	8
Hebrew	31	1	7	11	13
Polish	18	1	2	11	5
Russian	12	1	5	1	6
Italian	21	2	5	13	3
Hebrew	17	2	6	8	3
Polish	24	2	4	15	5
Russian	11	2	4	2	5
Italian	10	3	3	7	0
Hebrew	4	3	0	4	0
Polish	2	3	0	2	0
Russian	8	3	3	5	0
Italian	21	4	2	12	7
Hebrew	17	4	1	8	8
Polish	21	4	3	14	4
Russian	25	4	5	9	11
Italian	38	5	2	32	4
Hebrew	40	5	1	32	7
Polish	35	5	3	29	3
Russian	22	5	0	13	9
Italian	47	6	2	40	5
Hebrew	32	6	0	31	1
Polish	19	6	1	16	2
Russian	34	6	5	22	7

TABLE 10.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 12

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	74	1	9	59	6
Hebrew	68	1	7	59	2
Polish	41	1	11	25	5
Russian	32	1	5	24	3
Italian	61	2	5	47	8
Hebrew	43	2	1	37	5
Polish	29	2	3	19	7
Russian	37	2	1	27	9
Italian	9	3	2	5	1
Hebrew	5	3	1	4	0
Polish	2	3	0	2	0
Russian	7	3	3	2	2
Italian	16	4	1	12	3
Hebrew	9	4	0	8	1
Polish	8	4	2	6	0
Russian	13	4	4	6	3
Italian	13	5	4	8	1
Hebrew	9	5	0	9	0
Polish	8	5	1	5	2
Russian	16	5	2	11	3
Italian	6	6	1	4	1
Hebrew	2	6	0	2	0
Polish	4	6	0	3	1
Russian	1	6	0	1	0

TABLE 11.—RESULTS OF MENTAL TESTS APPLIED TO CHILDREN AGED 13 AND UPWARD

Nationality	No.	El.	Failed	Correct	Partly Correct or with Difficulty
Italian	64	1	9	53	2
Hebrew	32	1	4	23	5
Polish	21	1	3	17	1
Russian	16	1	1	13	2
Italian	14	2	3	10	1
Hebrew	4	2	0	4	0
Polish	6	2	0	6	0
Russian	18	2	2	13	3
Italian	29	3	3	17	9
Hebrew	72	3	7	62	3
Polish	84	3	6	71	7
Russian	62	3	4	50	8
Italian	16	4	2	14	0
Hebrew	16	4	0	16	0
Polish	10	4	1	9	0
Russian	8	4	2	6	0
Italian	20	5	6	11	3
Hebrew	32	5	2	27	3
Polish	16	5	7	8	1
Russian	14	5	5	7	2
Italian	184	6	7	171	6
Hebrew	106	6	3	102	1
Polish	131	6	11	111	9
Russian	102	6	14	72	16

The ages of the persons undergoing the tests given in Table 12 ranged from 13 to 50. Within these limits, age, sex, and previous environment (so long as the subject was illiterate), seemed to make no difference in the facility with which the tests were performed.

TABLE 12.—RESULTS OF MENTAL TESTS APPLIED TO PERSONS AGED FROM 13 TO 50

Nationality	No.	Failed	Correct	Partly Correct or with Difficulty
Italian	1,164*	134	1,030	¶
Hebrew	896*	21	875	¶
Polish	754*	36	718	¶
Russian	921*	74	847	¶
Italian	864†	72	702	90
Hebrew	651†	35	595	21
Polish	390†	61	318	11
Russian	582†	124	442	16
Italian	1,844‡	51	1,722	71
Hebrew	1,227‡	12	1,148	67
Polish	894‡	9	803	82
Russian	971‡	16	861	94

* These persons were tested with line *d* of the cube test, with three trials if necessary.
† These were given the five-block or Healy frame test.
‡ With these the test was counting backward from 20 to 1.
¶ Not recorded.

The suspected defectives recorded in Table 12 were allowed to pass; the final score, made by all those that are there shown as having failed, with other tests, was found to be sufficient to permit them to enter. Many such persons I have no doubt are below the average of their race and environment but will improve after entering this country.

The number of mental defectives certified as such by the officers of the United States Public Health Service, and deported promptly by the immigration department, each month from Ellis Island alone averages from 75 to 100; the largest number in one month being 134.

To the kindness and help of my senior officers, Surgeon L. L. Williams, Surgeon E. K. Sprague and Surgeon C. W. Vogel of the Public Health Service, I owe the opportunity of presenting this paper. The officers who participated equally with me in this work and through whose painstaking and untiring efforts much valuable data has been obtained are Surgeon M. K. Gwyn, P. A. Surgeon R. E. Ebersole, P. A. Surgeon E. H. Mullin, Assistant Surgeons G. A. Kempf and W. L. Treadway, and Dr. Bernard Gluek of the Government Hospital for the Insane at Washington, D. C. One of these officers, Dr. E. H. Mullin, is now engaged in research among selected average normal aliens.

AN ANATOMIC AND PHYSIOLOGIC METHOD OF SHORT-CIRCUITING THE COLON

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Anastomosis of the caput coli at its lowest level with the rectum, as a means of short-circuiting the large bowel, presents all of the advantages and eliminates many of the evils of the operative procedures for this purpose now in use.

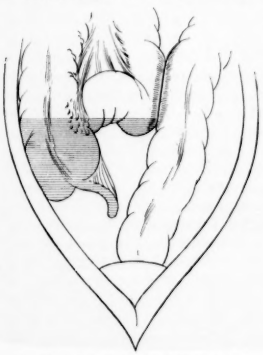

Fig. 1.—Caput coli undrained by ileosigmoidostomy because of ileocecal valve and anastalsis.

Fig. 2.—Stasis in lowest coils of sigmoid below ileosigmoidostomy.

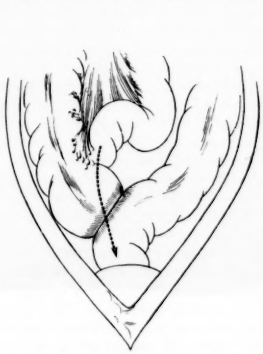

Fig. 3.—Direct and ample drainage from caput coli into rectum.

Ileosigmoidostomy does not always drain the cecum, as shown in Figure 1.

Anastomosis of the terminal ileum with the rectum is somewhat more efficient in that in this procedure account is taken of stasis in the lowest coils of sigmoid, and the contents of the ileum after such an operation are not emptied into this incompetent segment, but below it.

If this operation be done by detaching the terminal ileum and making a lateral ileorectal anastomosis, the pouch formation at the blind end of the ileum, described by Axel Werelius,[1] may defeat the object of the operation. Reversed peristalsis in the ascending colon, as described by Cannon, Rieder and Elliott, aided by pericolonic adhesions or membranes, will favor the retention of a stagnant mixture of fermenting food and bacteria in the caput coli.

If the undetached ileum be anastomosed with the lower sigmoid or rectum, drainage of the caput coli, a dilated pouch rich in bacterial flora and decomposing food residue, is inadequate. In this case a considerable part of the contents of the ileum will reach the cecum as before operation and be held by the atonic caput coli, the ileocecal valve and anastalsis as in a catch-trap.

If the caput coli be anastomosed freely to the rectum at the lowest point possible without traction, then the reversed peristalsis of the ascending colon must favor the emptying of the cecum through the artificial opening in the floor of the pouch, which is the chief habitat of ammoniacal food and intestinal bacteria of decomposition, and which even in starvation is not entirely empty (Cannon).

A majority of apparently healthy dogs show evidences of chronic inflammation about the caput coli, associated with stasis, which is most marked in the sausage-like appendix and the engorged caput coli.

Pericolonic inflammation in the human species likewise chiefly centers about the cecum and caput coli. It is here that direct drainage is most needed.

Anastomosis of the caput coli with the rectum may be made with sutures or the Murphy button. I have used the 1½-inch button for this purpose frequently and satisfactorily. The button is quite safe in this particular instance, since whichever way it is withdrawn it will drop into the large intestine and is discharged readily. In my experience the corrugated caput coli has adapted itself more readily to the button than to sutures. The selection of the site, however, is of more importance than the method of securing the anastomosis.

In order that the anastomosis may be made on the most dependent surface of the caput coli, the appendix though normal, if in the way of anastomosis or good drainage, should be removed.

331 North Delaware Street.

1. Werelius, Axel: Surg., Gynec. and Obst., October, 1913.

PROGRESS OF ORTHOPEDIC SURGERY *

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As Wright says, the physician of the future will be an immunizer.

The greatest boon of the last decade to the orthopedist, as well as the general surgeon and physician, has probably been the advance in the treatment of tuberculosis. To Fraser the credit is presumably due of establishing the importance of determining whether a given tuberculous infection is of the bovine or the human type. He has demonstrated that in animals inoculated with the human type of tuberculosis there is little local or general reaction, with a gradual giving up of weight-bearing, and several months afterward rarely any osseous involvement when this material is injected into the knee-joint, and that only a chronic synovial tuberculous process develops; but if the material injected be of the bovine type the animal becomes crippled, the articular cartilage becomes eroded and the joint becomes filled with caseous materials inside of ten days or two weeks. Foci in the neighboring bones, the lungs, spleen and kidneys are often found and speedy death of the animal follows. In the examination of the material obtained at operation in seventy cases of bone and joint tuberculosis in which the patients were under the age of 12, he found the bovine type in forty-one cases and the human type in twenty-six, while three showed both. He considered the milk-supply responsible for the bovine cases.

From this it looks as though the bovine form of tubercle bacillus is the one that is most dangerous, and that the bovine variety is principally transmitted by milk. Julius Rosenberg has been able, by inoculation of cows and goats, completely to immunize the milk, which could be used and now is being used without the slightest particle of ill effect; in other words, during and after immunization the milk remains wholesome. Milk from the immunized animal contains antitoxins and bactericides differing in no respect from those of the blood-serum. The immunized milk, instead of furnishing a culture-medium, is inimical to the growth of bacteria, owing to the presence of the precipitins and bactericides. In order to prove this, Rosenberg took 5 c.c. of milk immunized against tuberculosis, added a loopful of human tubercle bacilli, injected this into the peritoneum of a guinea-pig, and found the animal perfectly well after four weeks, whereas the same amount of tubercle bacilli mixed with sterile water and injected into another pig was followed by death from tuberculosis in the same length of time. He has succeeded, he thinks, in producing passive immunity by having patients drink the milk of these immunized animals. The fact that immunized milk in his hands has destroyed tubercle bacilli and produced antibodies in the blood would clearly show its indication and usefulness in tuberculosis. Should this be demonstrated, and Rosenberg is now supplying several hospitals in the East, we have with us the greatest boon that the medical profession has been given in five decades.

Serum therapy in tuberculosis has evidently come to stay, as it is useful not only in closed but also in open tuberculosis. Foerster speaks most favorably of tuberculin in surgical tuberculosis, but believes in exceedingly small doses. Fraser and McGowan advocate by all means the use of autogenous vaccine, and say that when it is impossible to procure this the vaccine prepared from tuberculous material from the human gland is the best.

* Read before the Academy of Medicine, Jan. 17, 1914.

ARTHRITIS

Ely believes that the classification of the joint-diseases is to be found in the two essential joint structures, the synovia and the bone-marrow. The first class is characterized by proliferation of the synovia or the lymphoid marrow or both, and as a result of proliferation of these two tissues the parenchyma of the joint, the cartilage, atrophies. The other class is characterized by a degeneration of the synovia and of the lymphoid marrow, and as a result of this the bone and cartilage show a distinct tendency toward hypertrophy and growth of new bone. Of course, this classification corresponds closely with the atrophic and hypertrophic types of Goldthwait. According to Billings and Rosenow, chronic arthritis with deformities is primarily of infectious origin. Woodward and Wallace have noted that in what is termed rheumatoid arthritis there is a marked diminution of the free hydrochloric acid with an excess of mineral chlorids in the gastric juice. The first step in the treatment of any form of arthritis, of course, is the thorough investigation and a finding of the focal cause. Billings believes that the faucial tonsil is most frequently the seat of focal infection; still he insists on other points, such as the sinuses, the teeth, the jaw and other organs being looked into frequently. A seemingly innocent tonsil after inspection will divulge the secret. He advises, by all means, the use of braces to correct the deformities if possible, but the hygienic management does more than anything else, and the basis of the treatment is immunity established by the judicious use of autogenous vaccines. Of course the removal of the cause is always demanded.

POLIOMYELITIS

Howard and Clark have shown that for several days the common house-fly may carry about the active virus producing this dreaded disease. The mosquito will not carry the virus. Bedbugs will carry it for seven days. Lucas and Osgood have demonstrated that the virus will live for two years in the nasal discharge. Flexner is still working on an immunizing serum.

Orthopedic surgery has made many advances during the past few years in the treatment of anterior poliomyelitis. Of course, in the acute stage rest in a plaster-of-Paris bed or some other form of splint to maintain normal position of the affected members is to be prescribed. At present there are a number of operative procedures which can be pursued a year and a half or two years after an attack: arthrodesis, tendon transplantation, use of silk ligatures and nerve anastomosis. There has been no improvement on the Whitman method of arthrodesis of the ankle-joint, advisable in almost all cases of paralytic calcaneus; this consists in the evulsion of the astragalus and dropping of the tibia on the top of the os calcis, with or without transplantation of the peroneus tendons.

Tendon transplantation goes back as far as 1876. Lange probably has done more than any one else to perfect this method, and also to advise the use of artificial tendons in the lengthening and transplantation. At first he attached these ligatures or tendons to the periosteum, but now his method with the silk or with the tendon is to transfix the bone and carry these through, lapping after transfixion. What led him to give up, to a great extent, the periosteal attachment, was the fact

that after use the tissue seemed to lengthen at the point of impact. Lange has pursued the use of silk for artificial ligaments of the joints, and this combined with a partial arthrodesis is probably, at present, the best method, especially with the ankle-joint. Arthrodesis of the knee-joint is only occasionally employed, resection being better. Arthrodesis of the hip is rarely done at present; a brace here seems to be the best method of treatment. Nerve transplantation and anastomosis in anterior poliomyelitis are still in the experimental stage.

The new operation in nerve transplantation which has been advanced by Taylor and Casamajor for traumatic Erb's paralysis in adults should be mentioned. The traumatic variety seemingly is not uncommon. This paralysis is usually caused by the forcible separation of the shoulders from the neck, and renders the arm absolutely useless. The operation has been done quite a number of times by Taylor and Casamajor, and although perfect results have not followed, marked improvement in the majority of cases has been reported up to date. It is a remarkable fact that in this injury the cervical fascia gives way before the nerves, next the nerve-sheath, and finally when the nerve heals, these combine to form an organized cicatrix, which prevents the passage of nerve impulses or even the regeneration of nerve fibers.

Palpation of the neck in the region of the fifth or sixth cervical transverse processes gives evidence always of a mass. This cicatricial mass is dissected out completely and the nerves brought if possible into approximation and held in this position from four to six or eight weeks by a brace or plaster of Paris applied so as to approximate closely the head and shoulders. Then passive motion is practiced, beginning with the arm and head. When the nerve-roots have been torn from the cord there is no chance of joining, and anastomosis is done from the nerve to its adjacent one. The nerve most frequently torn is probably the fifth or sixth. Strong silk is used in the sutures. Under ether anesthesia an oblique incision is made from the posterior bone of the sternomastoid muscle at the level of the carotid tubercle down to the junction and middle third of the clavicle. The only important vessels that are brought quickly into view are the suprascapular and transversa colli. It seems that with this operation, for the first time in the history of surgery the deformity of this character has been the subject of operative work.

CONGENITAL DISLOCATION OF THE HIP

In 1890 Hoffer of Berlin advised an open operation for this deformity, which was looked on up to this time as irremediable. In 1895 Lorenz modified this procedure and began his closed method of reduction. In 1900 he published his results. It is interesting to note that among 450 of these cases there were eleven of fracture of the neck of the femur, three of fracture of the pelvis, three of perineal paralysis, three of crural paralysis, three of sciatic paralysis, one of rupture of the femoral artery, and one of gangrene necessitating amputation. These complications are supposed to be due to the great amount of force used in the abduction of the limb.

In 1905 Calot modified Lorenz' method. After the patient is anesthetized, the pelvis is firmly fixed by an assistant, the operator flexing both the thigh and the knee to 90 degrees, at the same time firm traction being made directly upward with the knee in the flexed position, with little or no abduction or rotation. While this manipulation is carried out, one assistant holding the pelvis down and the other making traction, the operator places his thumbs beneath the great trochanter and presses upward, by which means he is enabled to press the head of the bone directly into the acetabulum. This seldom fails, as Calot says, with patients up to 3 years of age. A plaster spica is then placed on in the position in which the reduction occurs. It is well padded with cotton, and includes the foot and entire limb and pelvis. Following this treatment of Calot, Hibbs of New York constructed a table for the use of which the following instructions are given:

> With the child on the table and the pelvic straps applied and made very tight so as to fix the pelvis, the thigh is flexed and abducted, and when in this position the leg is extended until the hamstrings are tight, but not stretched. At this point in the procedure the trochanteric pad is forced upward against the trochanter so as to force it upward and forward. The force exerted by this pad, as it is sent against the trochanter, may be estimated by the increased tension of muscle when the pad is securely against the trochanter, the leg being already in extreme abduction and flexion.
>
> It is abducted and extended, and as the trochanter is held against the pad, the head is forced forward and upward into the acetabulum. The leg should be put in plaster with muscles tense at this point.

Hibbs has succeeded in reducing these congenital luxations up to the age of 7 with little or no trouble. The number of cures, by which I mean complete functional and anatomic recoveries, averages 90 or 95 per cent. in unilateral cases and probably about 50 per cent. in bilateral cases. In a great many cases the transposition of the head of the bone under the anterior inferior spine gives a good functional result, but this is not an anatomic cure.

OPERATIVE TREATMENT OF POTT'S DISEASE

As far back as 1891 Hadra advised and did the wiring of spinal processes in order to immobilize the vertebrae. This was tried by several surgeons afterward, but was soon discontinued.

Lange, on his visit to this country in 1910, read a paper before the American Orthopedic Association in which he pictured the use of steel wire buried on the other side of the spinal processes and held in position by strong sublimated paraffin-silk ligatures. He also exhibited roentgenograms of several cases in which he had succeeded in embedding the wire. There was apparent success in one or two cases, but in most it had to be removed on account of the change in the metal.

In June, 1911, Hibbs commenced his operation of cutting down on the spinal process, and stripping the spinal supraspinous ligament and periosteum from each side of the bone above and below the area of the involvement. After being laid bare, these spinal processes are broken down, greenstick-fractured at their bases and lapped one over the other so as to produce a continuous bony formation, thus fixing the spine.

The same year, in September, Alby began his bone transplantation by splitting the spinous processes with a chisel down to their bases, cutting off a splint of the tibia and implanting this so as to cover a process or two above and below the involved area. Both of these operative interferences have been remarkably successful, and although the time has not passed for final judgment, it is undoubtedly the best treatment for rapid recovery in Pott's disease.

MOBILIZATION OF ANKYLOSED JOINTS

The up-to-date treatment of ankylosed joints is practically the method of Murphy with the fascia and fats interposed and Baer's pig's-bladder membrane.

SCOLIOSIS

Since its birth orthopedics has had scoliosis as a *bête noire*. Rotary lateral curvature of the spine has probably had as much hard work done on it as all of the combined deformities together, and not until 1911, when the treatment of this trouble was to a great extent improved by Abbott, did the profession accomplish much in the way of correction.

The Abbott method has been used generally throughout this country and some of the foreign countries with varied success. Dr Abbott himself is probably indebted to Dr. Goldthwait of Boston for the demonstration of the fact that correction, particularly of lateral scoliosis, in the flexed position of the body, is due to unlocking of the articular processes of the vertebrae.

After having pursued this treatment in a great many cases of rotary lateral curvature, Abbott's conclusions are as follows:

1. Rotary lateral curvature of the fixed type, developed in childhood and persisting in adolescence, cannot be cured perfectly.

2. The condition of the patient can be much improved.

3. The anteroposterior postural deformities can be corrected.

4. The lumbar lordosis can be corrected.

5. The lateral deviation of the body can be corrected.

6. The lateral deviation of the spine is corrected in early cases.

7. The rotation of the vertebrae may be improved but not corrected.

8. The use of the plaster jacket, applied by the Abbott method in flexion with corrective felt pads, is very satisfactory, in that we are enabled to obtain the result in a shorter time than by any other method of treatment heretofore practiced.

MacKenzie Forbes of Montreal, last July, published a paper entitled "The Paradoxical Treatment of Scoliosis." In 1903 Lovett found that if the third dorsal vertebra is fixed in a wrench, a lateral curve always accompanies the twisting, going to the left when the twisting was to the right, and vice versa. Forbes found that if a patient were twisted to the right by the arm instead of the wrench, the side bent to the right, and vice versa; in other words, he seemed to have discovered a paradox; but this was accounted for by the fact that Lovett applied force directly to the spine, and it rotated on its own center of rotation. Forbes applied force to the thorax and indirectly to the spine, in this way acting on the rib wall; the rib acted as a lever on the posterior part of the vertebrae, and the vertebrae rotated about their center of rotation. Hence they rotate toward the direction of the force applied. It is well known that the body of each vertebra in organic scoliosis is rotated toward the convexity of the spinal curve, and in speaking of the treatment of this condition of organic scoliosis he says:

> Is it possible that we have erred in the past when we have treated by applying force to the convexity of the spinal curve? What do we do? We approximate the vertebral body to the rib wall, we increase the rotation of the vertebra itself; in other words, we have been rotating in a wrong direction.

Forbes' treatment, the rotation treatment of scoliosis, aims at causing the correction of the deformity by the production of its counterpart, and is undertaken by rotating the patient's thorax on a fixed pelvis in a direction toward the side of convexity of the curve. Thus we not only change the curve of the spinal column, but we also change the deformity of the thoracic wall; that side which bulges unduly is flattened and the flattened side is filled out. The patient is held in this position by the application of paster of Paris. Of course, flexion of the spine is necessary. All that one has to do is to rotate by means of the arms and fix, cutting out windows of the contracted thoracic walls and providing pressure over bulging walls. This treatment may be combined with that of Angeles G. Cook, who demonstrates that the lumbar spine is the center of motion of the human body, and that the balance is an absolute essential. (It may be given as an axiom that if we continue on our feet and if we can reverse the lateral curve of the lumbar spine, we must of necessity reverse the whole balance of the human body. It does not matter whether the curve of the lumbar spine be primary or compensatory, if the lumbar spine is curved to the left we can cause it to be curved to the right; and if we can cause the curve to the right we have changed the entire balance of the whole body and all the factors, through gravity modified by anatomic conditions.) Wolf's law, etc., which formerly worked to produce the deformities, is now utilized to correct the deformities, so we see that the last word in scoliosis has not yet been spoken.

That the internist can be assisted materially by the orthopedist in the treatment of abdominal visceroptosis, chronic intestinal stasis and hypertension is plainly demonstrated in the following facts expressed by Joel E. Goldthwait:

1. Abdominal visceroptosis is invariably associated with disturbances of poise, which must result in weakness of the muscles and strain of the joints. The joint-strain is manifested chiefly in the feet, knees, sacro-iliac joints and low back, and shoulders. When the congenital type of visceroptosis exists, the disturbance in poise shows even in childhood.

2. The imperfect poise associated with visceroptosis results in a gradual weakening of the trunk-muscles, with consequent lessening of this part of the support for the trunk as well as for the viscera.

3. The imperfect poise, commonly showing as the droop of the shoulders and flattening of the chest, must of itself cause downward displacement of the abdominal organs, with possible interference with their function, even though the formation of the organs, together with their ligaments, was wholly normal in the beginning.

4. Many of the chronic joint-diseases are probably due to the disturbed physiology resulting from the malposition of the viscera as well as possibly to absorption from the gastro-intestinal tract.

5. Treatment of the joint-strains resulting from the postures associated with visceroptosis, as well as the treatment of the joint diseases due to disturbances of the abdominal viscera, is incomplete, and many times hopeless, unless the viscera are properly treated so that undue strain is relieved and their normal function made possible.

6. The best health and greatest efficiency of the individual are possible only when the body is used in such poise that there is no undue strain or interference with any of the structures.

As Goldthwait has said, when the human figure is held fully erect, the chest is raised, the ribs are flared at the bottom, the diaphragm is high and this gives space under the ribs for the upper abdominal contents. When these upper organs are held in place there is ample space for the other viscera in the lower abdomen. When the muscles of the abdomen are contracted the wall is firm and we have support in the front and sides.

If the body droop, the shape of the abdomen changes. The ribs incline downward and there is a backward movement of their anterior portions; as can be seen at once, this results in a diminution of space in the upper abdomen, and the diaphragm must be pulled downward. Now the abdomen itself protrudes, everything is directed forward and downward by continued pressure from above and a complete relaxation of the muscular rigidity of the normal abdominal walls. The lumbar spine under these circumstances is lordosed and the upper part of the chest is thrown forward and a stooping position is maintained.

We are well aware that there are two types of this enteroptosis, congenital and acquired. We fully understand that if the congenital type exists, it must always exist; but it is well known that during early life the prominent symptoms of a general enteroptosis do not attract attention. The symptoms which develop later, undoubtedly because of the increased downward misplacement of the organs, can be moderated so as to relieve strain, and will be followed by improvement with retraction of the visceral ligament exactly the same as that which takes place in a relaxed joint with the removal of the strain. (In the attitude of congenital ptosis, note the downward inclination of the ribs, and the backward inclination of the body from the hips.) Goldthwait has a brace (from a cast) made in partial hyperextension, and this is worn night and day and just after meals. Hyperextension over a pillow for thirty minutes, followed by the prone hanging position for five minutes, will reduce blood-pressure in five minutes from 10 to 30 mm.

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AN EVALUATION OF THE PSYCHOGENIC FACTORS IN THE ETIOLOGY OF MENTAL DISEASE

INCLUDING A REVIEW OF PSYCHANALYSIS *

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PHILADELPHIA

The increasing spread of the cult known as psychanalysis, the consequent tendency to neglect the clinical study of psychiatry and the confusion resulting from the disregard of established clinical distinctions has led me to undertake a consideration, first of the value of psychogenic factors in general, and secondly of sexual psychogenic factors in particular.

INTRINSIC CAUSES OF MENTAL DISEASE

When we review the known facts of the etiology of mental disease, we realize that they resolve themselves primarily into two groups, namely, the intrinsic and the extrinsic causes. The intrinsic causes are embraced in the great factor of neuropathy. By neuropathy is meant a condition in which the nervous system is fundamentally aberrant and defective in development. There are present morphologic and functional deviations and weaknesses, and as an outcome there follow of necessity — it may be during childhood and youth or in the adult period — degeneration and disease. Quite commonly the existence of such a neuropathy is revealed in the peculiarities of mental development of the individual; in retardations, precocities, irregularities, arrests and failures, or, in lesser degrees, in morbidity of the affects, in excessive self-consciousness and introspection, in shyness, suspicion, distrust, unreasonable fear, morbid conscientiousness. As might be inferred, it is not only the nervous system, but the organism as a whole, which is aberrant and defective. Occasionally, there are present gross anatomic appearances, the significance of which is obvious. Among these are peculiarities in the conformation of the skull, of the features, ears, limbs or digits. Sometimes the skull presents an abnormally flattened occiput or it may be that the skull is oxycephalic, clinocephalic or markedly asymmetric in shape. The limbs, too, may be disproportionally short or disproportionally long; the digits may depart from the normal relations of length to each other or may be otherwise abnormal; or it may be that a male patient presents feminine anatomic characteristics or a female patient masculine anatomic characteristics. The presence of such features certainly justifies the inference that the organism as a whole is imperfect and deviate. Significant, too, are such occasional findings on the necropsy table as anomalies of the viscera, for instance, anomalies of the cardiovascular apparatus, anomalies in the lobulation of the lungs, anomalies in the lobulation of the liver, and horseshoe and amorphous kidney. It is not surprising that individuals who are defective in their organization, who have a nervous system imperfectly and aberrantly constituted, should break down under the mere strain of living. That such breakdowns occur, at times early or relatively early and thus give rise to the insanities of the juvenile period, and at others, relatively late and thus give rise to the paranoid affections of the adult, is a matter of common knowledge.

The subject of neuropathy presents itself, however, in still another aspect, and that is in its relations to heredity. That hereditary factors obtain in a vast number of the insane is of course well known, 80 per cent. and more being present in the manic-depressive and 80 or 90 per cent. in the group of dementia praecox and paranoia, and an overwhelming percentage in the neurasthenic-neuropathic states, psychasthenia and hysteria. It also becomes evident that heredity is of two kinds, one in which a specific neuropathy and another in which a neuropathy that is general in character is transmitted. As an instance of the first, melancholia-mania is probably to be regarded as typical and as an instance of the second, dementia praecox. It is probable also that in some affections, as paranoia, both forms of hereditary transmission may be commingled. The object of the present paper forbids a detailed consideration of this interesting subject. I am constrained at this time merely to lay emphasis on the all-important fact of neuropathy, and later to point out the rôle which it necessarily plays in the evolution of symptoms.

* President's Address before the Annual Meeting of the Philadelphia Psychiatric Society, Jan. 9, 1914.

EXTRINSIC CAUSES

Among the extrinsic causes of mental disease are the infections, the intoxications, visceral disease, the diseases of metabolism, trauma and the like. The rôle which these factors play is well recognized. The causal relation is striking and undeniable, as witness the deliriums and confused and allied states which accompany or which follow the infections and intoxications. We are always, however, forced to take into consideration the factor of a preexisting neuropathy. It is a matter of every-day experience that some patients become delirious from causes totally inadequate to produce delirium in others. Every practitioner who has to deal with the infectious diseases realizes the truth of this statement. Again, poisons, such as alcohol, give rise in some persons to pronounced mental disease while other persons exhibit an amazing tolerance to the same poison. It is this factor of tolerance, this factor of resistance, on which the difference depends. Feebleness of resistance to the various extrinsic causes of mental disease — infections, poisons, visceral disease, trauma, etc. — means of necessity a neuropathic make-up, a neuropathic constitution. Of the total number of cases of typhoid fever, for instance, only a very limited number develop insanity as a sequel, and in this limited number the explanation must be found in a preexisting neuropathy. Further, in my experience a frank history of neuropathic factors in the heredity is found in more than half the cases.

What is true of the infections and poisons is equally true of trauma, whether that trauma be physical or mental. Evidently psychogenic factors, so-called, must be included among the traumatic. To these psychogenic factors let us now turn our attention.

The older writers laid much emphasis on psychic causes in the etiology of mental disease. Among such causes a prominent place was given to worry, care, sorrow, remorse, reverses, disappointments, misfortunes, all of which were supposed to have a causative value in the production of the most diverse affections, melancholia and paresis, for instance. Melancholia is now known to be but a part of the symptom group of a much larger affection, manic-depressive insanity; and the latter in turn has proved to be a specific neuropathy, one almost exclusively hereditary, which bears no more relation to psychic trauma than it bears to the infections. Paresis, on the other hand, is now known to be a disease of definite microbic origin, as much so as tuberculosis, and is as little dependent on psychic trauma as is the latter.

In other words, the more we have learned of the true nature of mental disease, the more have psychic causes disappeared from our etiology. An increasing experience has shown that such factors can be merely incidental, that at most they can be of value only in a preexisting neuropathy. Further, this value is very limited and stands in direct relation to the degree of this preexisting neuropathy.

Again, the reaction of a person to a special psychic factor depends on the extent to which the emotions are aroused. In the normal person this reaction does not lead to pathologic results; when pathologic results do follow, these results are to be regarded as merely symptomatic of the underlying neuropathy. At most, psychic factors give to a preexisting morbid state a special coloring, give a special detail to a delusion or to an obsession, but cannot primarily bring it about. At most, psychic factors act as an incidental support or framework on which the delusional or obsessional feeling can secure a hold or by means of which it can obtain concrete expression. The truth of these statements will, I think, become more apparent as we proceed.

PSYCHANALYSIS

Let us without further delay pass to the consideration of the psychic factors on which Freud and his disciples have laid so much stress, namely, psychic factors sexual in nature, sexual psychogenic factors as they might be called, or, to use the language of the Freudian sect, sexual traumas. It is to these factors that this sect ascribes every known form of nervous and mental disease with the sole exception of those affections, the actual organic, infectious or toxic nature of which it is impossible to deny. Further, these causes are said to be operative from intra-uterine life and childhood on; and from their very nature are such that every human creature is or has been exposed to them. At the very outset we are filled with astonishment at the fact that there are any normal boys and girls, any normal men and women left in the world, and the inquiry naturally suggests itself, on what are these extraordinary claims based? I shall not take the time to review the well-known case of Breuer — the girl who was hysteric and who got better after confessing to Breuer that she had masturbated — on which case Freud subsequently built his theory of sexual traumas and later developed his treatment by psychanalysis, but shall take up at once the various sources from which the Freudians assert that they derive their information. The first of these consists, as is well known, in the unearthing — as they believe — of repressed memories of sexual occurrences — "traumas"—experienced in childhood. Such memories, being unpleasant or painful, are suppressed and not permitted to enter the field of consciousness, but commonly the attempt to suppress the memory is only partially successful. Though buried, it is supposed to be still active and manages to reach the field of consciousness by "displacement" and "conversion." The unpleasant feeling associated with the memory leaves the memory — the complex — associated with the sexual trauma and joins itself to some other complex which has free access to the field of consciousness, and in so doing gives rise to fears, obsessions, delusions, tics or other psychic phenomena.

To the student familiar with the development of our knowledge of functional nervous disorders, the preceding interpretation at once recalls the writings of Janet. Janet, it will be remembered, showed that all of the various fears, phobias, obsessions, states of anxiety, indecisions and the like were really manifestations of but one disorder. He thus, by a brilliant generalization, brought them under one caption, for which he employed the term "psychasthenia." At the same time he pointed out the fact that in many of these cases, various acts of the patient in the past, breaches of conduct, of the proprieties, peccadilloes of various kinds, of which the patient was subsequently ashamed and which he tried to forget, played an important rôle in the evolution of the symptoms. Janet's observations were as important as they were satisfying. They really embody a kernel of truth, a modicum of actual scientific fact. Neither Freud nor his followers gave to Janet's discovery either recognition or attention, but on material such as furnished by the Breuer case of hysteria and restricting all causes to sexual transgressions, proceeded to erect a

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special system of psychology; special, first, in that it deals exclusively with sexual factors, and secondly, in that it constitutes a system of psychology of the unconscious mind. They formulated theories which deal with doubtful inferences and questionable hypotheses as though these were established facts and this, too, in a field in which from the very nature of the case that which actually occurs is beyond the possibilities of humen ken. A special terminology has arisen; for instance, "repression, displacement, condensation, transference, introjection, projection, introversion, conversion, sublimation, determinations, exteriorizations" and others still which might be added; all of these terms are used as though they dealt with actually observed concrete facts, and not with purely metaphysical abstractions.

This method of dealing with a subject essentially incapable of scientific demonstration becomes especially evident in the Freudian explanation of dreams. This need not be repeated here, save to remind the reader that every dream is held to have a sexual content, that it deals with a subject of such a character that it cannot be discussed without injury to the dreamer, without lesion of the proprieties, and lastly that the dream always deals with a desire. Sometimes the dream is a realization, unveiled and undisguised, of an unsuppressed desire; sometimes it is the realization of a desire veiled, latent and suppressed; sometimes it is the realization of a desire suppressed and little or but slightly veiled. The secret, non-communicable nature of the dream and the desire, veiled or outspoken, constitute, according to this theory, the important factors of the dream. In other words, in the dream, suppressed sexual complexes are supposed to come to the surface and the desire, veiled or frankly expressed, is thus gratified. By this is not meant that dreams always deal with nakedly expressed sexual conceptions and feelings, but quite commonly that these elements are veiled or symbolized, so that, the patient having related or written out his dream, the psychanalyst reads into them the fantasies of his own autosuggestions. To show the extent to which Freud has gone, he assumes that during the dream there is a "critic" or "censor" which concerns itself with the suppressed desire. The suppressed desire forms a compromise with this critic, is modified, symbolized, and the desire so modified is represented as fulfilled. In other words, according to this theory, just as a repressed sexual complex may give rise to a nervous or mental symptom by reaching the surface of consciousness in a transformed or converted shape, so may it reach the surface in the dream state in a converted form and thus bring about relief. For the introduction of the hypothetic "critic" or "censor" there is not the slightest justification; it is something created, cut out of the whole cloth. Indeed, this may be said of this entire dream theory. It is very probable that dream states do not embody the complex processes here outlined, but that indeed they are of very short duration. There is much on the basis of observed fact to justify the opinion that dream conceptions arise just before the sleeper awakens, that is, just as he is in the act of entering into consciousness. The dream conceptions are part and parcel of the act of awakening and merely furnish the material from which the dream is subsequently elaborated. This elaboration in truth occurs only after waking consciousness has been established. The confused, simultaneously arising dream pictures are then arranged according to time and location, the lacunae being filled in by the aid of the imagination and reflection.

In addition to the theory of the repressed memories of sexual traumas in childhood, and the repressed desires revealed in dreams, the Freudians employ as is well known a third method of unearthing repressed sexual complexes from the unconscious mind — the subconscious — namely, that of the association test. The occasion forbids a consideration of this method at the present time; suffice it to say that its results are commonly quite trivial and are often subject to gross misinterpretation.

The Freudian psychology of the unconscious mind is in several aspects extremely peculiar. For instance, just as Freud does not hesitate to create out of the whole cloth a wide-awake "critic" guarding the dream, he equally without hesitation ascribes new qualities and peculiarities to the emotions. He makes the latter separate things, mobile somethings, capable of being detached, displaced and producing effects which have no relation to the origin of the emotion. Again he assumes that, as in the case of the "critic" or "censor" of the dream, there is in the unconscious mind in the waking state, a something which manifests itself as an effort at self-protection, so that thoughts with unpleasant emotional content are shoved into the subconscious, but there only to give rise to other troubles. That this theory is not in accord with universal experience can, I think, be safely maintained. It is quite impossible, thus, to forget a real worry, as a crime, a financial disaster, death of a child, etc.; indeed, the greater the worry, the more insistently is it present to the mind.

Further, it should be emphasized that the Freudian psychology is peculiar in the fact that all of these detachable and movable emotions and suppressed memories have to do exclusively with sexual matters; and lastly that the repressed ideas coming to the surface in dreams, in psychanalysis, in the association tests, do not signify what they appear to signify, but are masked and disguised; in other words, are symbols. The art of the psychanalyst lies in the interpretation of these symbols.

That with such hypotheses and under such circumstances the psychanalyst can find in a given patient almost anything that he is looking for goes without saying. Indeed, the interpretation depends on the imagination, the autosuggestion of the analyst, the figments and the fancies of his own brain. At times the symbols indicate what they most readily suggest, at times and apparently without reason, the opposite. There can be no doubt that the psychanalyst always finds that for which he is seeking. There is not a single object in the universe in which a sexual significance cannot be discerned, whether it be a hat, a cup, a snake, a horse, a tooth-pick; even the physician's stethoscope is believed to be a phallic symbol. As a matter of course, the conclusion to be formed from the investigation of a given case already exists preformed in the psychanalyst's mind, namely, that there are present in the patient repressed sexual memories. The analyst regards this preformed conclusion as an axiomatic truth. The objection to this whole matter lies not so much in the unpleasant and repulsive character of its details as in the hopelessly illogical character of its doctrines and the unscientific character of its methods.

To what extremes and how peculiar the beliefs in regard to psychanalysis have grown is revealed by a cursory review of some of its later doctrines. It began with the theory of sexual traumas in childhood, but now

it has been extended to include the period of intrauterine life. The psychic life of this period, according to Freud's Hungarian disciple Ferenczi, is one of "unconditioned omnipotence."[1] This term, whatever it may mean, Ferenczi applies to the child *in utero* because, without any effort on its part, it is supplied with nutriment and caloric.

Further, while being born, that is, during the act of passing through the pelvis of its mother, the child suffers from fear, and this fear is the prototype of the attacks of fear which come on at later periods in the life of the individual, for these attacks act by evoking the memory of this "birth fear." Again, the child is not asexual. It finds itself in a state of auto-eroticism from which arise all of the determinations of its future soul-life. Still more, the child is a polymorphic pervert and universal criminal (Stekel). The first sexual tidal wave is reached at 3 or 4 years of age, and the dominating factor is incestuous love, the "Oedipus complex." In later life the tendencies of the individual are likewise determined by his eroticism; thus the "sublimation of erotic and criminal tendencies" gives rise to the surgeon. Economy, love of order and obstinacy indicate anal eroticism. Luxurious water-closets, that is, hygienic water-closets, such as are universal in America, also indicate anal eroticism. The love of domesticated animals, the liking for sport, are likewise the outcome of the libido (the sexual desire). The dream and the neuroses alike embrace not only the life of the child, but also that of the savage and primitive man. The epileptic attack is a retrogression into the infantile period of wish-fulfilment by means of incoordinate movements; it is an overpowering of the moral consciousness by the criminal unconsciousness; it replaces the sinful sexual act (Stekel). Melancholia and mania, we are told, are the product of the repressions and displacements of the converted sexual desire, the transformed libido. Delusions of jealousy have their origin in the projection by the husband of his repressed polygamous impulses on his wife. A cause of chronic paranoia is unmasked as an irritation of the anal erogenous zone. The symptoms of dementia praecox are conditioned by thoughts, which, because of their unpleasant character, are repressed; the delusive ideas of the patient are merely symbols of thoughts. The patient suffers from "reminiscences of humanity" while "his history embraces all mythology." The real underlying, the fundamental, the central phantasy of dementia praecox is of course the incest — the Oedipus—complex. What a narrow escape paresis has made in this list of affections! Yet the prediction can be safely ventured that it too, in spite of the spirochete, will be brought within the psychanalytic pale. Psychanalysis further explains migraine, every form of headache that is not organic, asthma, angioneurotic edema, hysteric sneezing, mucous colitis and what not. In what words shall we characterize such fantastic nonsense, such vacuous harebrained absurdities, such meaningless jargon! And such utterances are dealt with by the psychanalytic sect as though they were each and every one scientifically demonstrated facts, self-evident, axiomatic truths.

The psychanalysts have assumed a most exalted and expansive tone. They deal with the very "depths" of psychology, with the "weight of absolute fact." The publications of this or that member of the sect are spoken of as "revelations." Psychanalysis has "revealed the unconscious soul-life in its entire extent" (*Imago*). The dream interpretation is the solution of a riddle which has defied solution for thousands of years. Sexual morality is now erected "in a new form"; "there is now beginning a healthier, more honest conception of life," "for we know," say the psychanalysts, "that the future is ours." The hope is also expressed that the opponents of psychanalysis will be educated to assume a "respectable tone"; they are charged with harboring "unscientific prejudice" and "prejudiced science." They are also told that they are "ignorant prattlers." Psychanalysis has now expanded so as to embrace all departments of human knowledge. The journal *Imago* deals with the reformation of manners, of religion, of the science of religion, with right living, esthetics, literature, art, mythology, pedagogy, criminology and moral theology. The psychanalyst is now the great reformer who is putting everything to rights. He speaks with a smile of indulgence and condescension of the cavillers who fail to accept his doctrines; addresses himself to the "initiated" (*Wissenden*), speaks of the "Master" or of the "brethren"[1] of his cult.

At times it is proclaimed that the proof of the correctness of the psychanalytic interpretation lies in the cures affected. Breuer's original case of hysteria was the much-vaunted example of successful treatment. It is a matter, however, of every-day experience that the fact of recovery from hysteria is no evidence as to the specific value of any method of treatment, inasmuch as in hysteria recoveries occur under the most diverse conditions so long as the suggestion is made that the patient will recover. In the instance of psychanalysis both physician and patient start with the presumption, that is, with the suggestion that the cause will be revealed, that the cause *is* revealed and that, with this unearthing of the cause, the symptoms will disappear. The discovery of repressed sexual complexes is exactly what we would be led to expect under these circumstances; as in hypnosis, the believing physician and the believing patient react on each other; both are under the influence of the same suggestion. The patient knows just what is expected of her and the physician finds just what he is expecting to find. In other words, psychanalysis, in spite of the special technic which its disciples say they pursue, is nothing more than suggestion in a new pseudo-scientific guise. That it achieves a measure of success in such affections as hysteria—so amenable to all forms of suggestion—is not astonishing. It is exactly what should have been expected.

Inasmuch as we are told that the successful treatment of a case requires from six months to three years, it is not surprising that success now and then follows the persistent use of the treatment in affections that are self-limited in duration or that pursue a wave-like course. A case of melancholia so treated naturally comes to an end after a number of months and is then regarded as cured by psychanalysis. It is probable also that such cases are often improperly diagnosticated and are then reported as cases caused by this or that painful complex cured by psychanalysis. When the symptoms recur, which is almost inevitably the case, the patient usually has recourse to another physician and thus the failure becomes known, as in a case within my own experience. Stekel admits failures in periodic affections, in hypochondria and in homosexuals, but psychanalysis, rich in resources, explains failures by asserting that the patient did not want to recover and resisted his physician.

1. Hoche: Ueber den Werth der Psychoanalyse, Arch. f. Psychiat., 1913, li, No. 3. I have in these pages made free use of much of the matter in this admirable article.

It is a matter of proper inquiry whether or not psychanalysis is harmful. Hoche not long ago addressed a circular inquiry to a large number of clinicians, psychiatrists, neurologists and practicing physicians, selecting colleagues who were experienced and whom he knew personally or scientifically sufficiently well to place dependence on their judgment. The results of this inquiry, secured independently and from the most varied sources, were remarkably uniform. It has come to light in the first place, that psychanalysis is being applied in cases which one would think the psychanalysts themselves would regard as unsuitable—epilepsy, paresis, hebephrenia, catatonia, melancholia; such cases are doubtless submitted to the treatment as a result of gross diagnostic errors. Quite a number of practitioners of psychanalysis, it would appear, are persons who possess little or no training in psychiatry; indeed, a knowledge of clinical psychiatry is considered quite unnecessary by the disciples of this cult, inasmuch as three or four ideas, known in advance to lead to sexual causes, suffice to meet all wants.

Numerous communications received by Hoche report an intense and often persistent feeling of indignation on the part of the patients because of the reckless and shameless questioning to which they have been subjected, a feeling which often leads to an abrupt cessation of the treatment. This feeling is evident not only in those who are ill and morbidly sensitive, but also, it need hardly be added, in persons of an entirely normal, moral and esthetic make-up. What must we think of the wounding of the feelings of a sensitive and innocent nature when to a loving son or daughter is suggested an incestuous love for the mother? What injury can be greater than to give to one of the most beautiful relations in human life the most shocking and the vilest of interpretations? Harm also is done by fixing sexual associations in the patient's mind. Often this leads the patient baldly to associate every object that he sees with either the male or female genitals. Hoche's reports show, too, that engagements and wedded life have alike been shattered, destroyed by psychanalysis. Most serious of all, perhaps, is the poisoning of the minds of youthful patients. In more than one instance, cases came to light in which illicit sexual living resulted from the procedure, at times indirectly, and at other times, monstrous as this seems, as a direct result of advice given. Besides this, Hoche found in his reports other very serious outcomes, such as venereal diseases and illegitimate pregnancies.

The attachment of the patient to the physician, so prone to occur in hysteric subjects if the physician be at all lax in his attitude, is peculiarly fostered by psychanalysis. There are the daily or almost daily, long-continued conversations on sexual matters extending over many months of time—sometimes as long as three years—conversations of the most intimate character, in which the patient, who is usually a woman, openly acknowledges her suppressed sexual desires and rehearses at length the memories connected with them. Human beings, men and women, are so constituted that intimate conversations on sexual matters cannot take place without being accompanied automatically by certain associated feelings and emotions, and when we reflect that the very object of the treatment is to lay bare the repressed desires of the patient and to bring about relief by an emotional discharge—the so-called "abreaction"—we cannot but feel that the relation between physician and patient is, as a writer in *Science* has recently expressed it, a quasisexual one, no matter how guarded it may be. No wonder that the patient often acquires an attitude of absolute dependence on the physician, of being utterly unable to get along without him. Again, because of the long-continued mental concentration on their inner selves, on their sexual experiences, the patients become incapable of giving their attention to other matters, incapable of following a daily occupation, incapable of attending to any consecutive duties. They lose their self-confidence; they can do nothing without asking the doctor; they must give him an account of every thought, every incident, no matter how trivial. That such persons frequently become useless to themselves and their families is not surprising. States of excitement also are occasionally induced in hysteric persons and also in patients suffering from other affections. Another effect is to create in the patient a fear which may acquire the force of an obsession, that in the recital to the physician or in making the record of the dream, she has forgotten something important, perhaps the most important thing in the entire matter. Depression, too, especially is fostered in those who already entertain delusions of self-accusation with a sexual content. The constant questioning of the patient on sexual matters, the constant delving for new sexual material, confirms the patient in her morbid self-accusation. Several cases have, according to Hoche, terminated during such periods of depression in suicide.

PSYCHOGENIC FACTORS

In the earlier portion of this address, I endeavored to estimate briefly the value in etiology of psychogenic factors in general and clearly pointed out that for the most part this value is incidental only, that the underlying neuropathy is the real factor of importance. Again, in order to see the sexual psychogenic factors in their proper perspective, we must view the psychogenic factors as a group. The various complexes that enter into the conscious make-up of human life readily range themselves about our primal instincts. These, as I have elsewhere pointed out, may be enumerated briefly as follows: First, the instinct of self-preservation; second, the instinct of perpetuation of the species, and third, the instinct of communal preservation and perpetuation. The first embraces complexes dealing with food and the protection of the person; the second embraces complexes dealing with the sexual life; the third embraces complexes dealing with the relations of the individual to the community. In number and variety the last-mentioned greatly exceed those of the other groups; indeed, they are multiple and complicated in the extreme. Further, the relations of the individual to the members of the community are exceedingly close and the interchange of function unceasing. As a matter of fact, disturbances of the complexes dealing with these relations are far more numerous than of those dealing with self-preservation, or with sex; they are typified in the paranoid states. Again, disturbances of the complexes dealing with self-preservation—namely, delusions in regard to food, digestion, the viscera, etc., also are found in far greater number in the asylums than disturbances of the complexes dealing with sex. The latter require to be unearthed and, indeed, from that extramural material—the mass of cases outside of the asylums—of which hysteria is typical and which yields so redundantly all that is sought for.

MODERN MYSTICISM

The psychology of insanity, the psychologic interpretation of the symptoms, is one thing, psychanalysis is another. The psychology of insanity is a legitimate field of inquiry, though from the very nature of the subject its results must be largely speculative. Psychanalysis, on the other hand, is a cult, a creed, the disciples of which constitute a sect. To be admitted to its brotherhood, it is merely necessary that the novice should be converted to the faith, not that he should be convinced by scientific proof; for none such is possible. If the convert claims that he has found psychanalysis followed by cures, he places himself side by side with those who claim cures by means of hypnotism, divine healing, Christian Science and like procedures.

Psychanalysis is an outcome of the general mystic tendency of the modern world. Occultism and symbolism in art, music, literature and the drama—cubism, futurism, modernism, the problem play—are all expressions of this tendency. On what basis are we to explain such phenomena? Factors which influence the social condition, the mode of living, of great masses of people, all have to do with this psychopathic tendency. Among them we may enumerate the strain of modern living, the strain of the adaptation required by rapid rise in social level with its unaccustomed demands and new dissipations, the strain of the struggle of those who have not yet achieved their goal, and to this we should add the lateness of marriage and the difficulties of living a normal, a physiologic, a complete life. Under these circumstances the less stable and weaker minds lose their moorings. That which is old and has perhaps been acquired slowly, with difficulty and at great cost is forgotten. Truth is rejected for no other reason than that it is old.[2] New things are accepted for no other reason than that they are new. There is an abandonment of all previous standards. The mind is unhinged and takes refuge in mysticism. The real gives place to the unreal, the beautiful to the unbeautiful, the wholesome facts of life to the morbid untruths of disease; actual experiences are belied by pathologic illusions; the evidences of the senses are replaced by the phantasms of exhaustion. To the jaded and blasé psychopathic patient, to the chronic hysteric, psychasthenic, hypochondriac or what not, to the patient who has tried all sorts of procedures, psychanalysis presents something new, something interesting, something pruriently exciting.

Of course, such a procedure must have its vogue; indeed, it bids fair to acquire, as have other mystic methods, an epidemic character. That physicians are found not unwilling to profit by the material advantages of such an epidemic is both sad and true, though happily the members of this sect form as yet but a very small percentage of the general body of physicians. Indeed, very few prominent names appear among its votaries. Just at present two, perhaps, are especially in the limelight, Bleuler and Jung. The case of Bleuler, because of the position which he holds at Zurich, is particularly to be regretted. In so profoundly neuropathic an affection as dementia praecox, he gives to psychanalysis the first, if not the only, place in treatment. Further, as Hoche points out, he is responsible for the fact that in Switzerland to-day ministers are practicing psychanalysis among their flocks, and women school-teachers among their pupils! As regards Jung, the world cannot but look on his recent explanations, apologies and "sublimations" as in the nature of a retreat, a retreat which began last summer at the International Medical Congress in London, and which, though adroit, is none the less a retreat, the end of which is merely a matter of time.[3]

The prophecy can with safety be ventured that psychanalysis will in due course pass away, will in due course be a matter of history and it will then take its place side by side with other mystic practices, such as animal magnetism, mesmerism, braidism, hypnotism, metallotherapy, Perkinsism, Dowieism, Eddyism, Worcesterism, divine healing, New Thought, the Bergeon treatment of tuberculosis, hanging in locomotor ataxia, and other weird procedures that have time and again swept the earth in epidemic form.

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2. "A rejection of everything old because it is old is mischievous in its tendency. It is a spirit of literary licentiousness which seeks a reputation for genius and originality by thinking as no one has ever thought before, courting singularity for the sake of notoriety."—John Lidlow, provost, University of Pennsylvania, 1834-1853.

3. See also the first number of the Psychoanalytic Review.

RUPTURE OF THE INTESTINE

WITH SPECIAL REFERENCE TO ITS EARLY DIAGNOSIS

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Rupture of the intestine, variously designated "subparietal," "subcutaneous," "traumatic," "rupture produced by blunt force," "rupture without external wound," "concealed," etc., relies for its great interest on the distinguishing characteristic of its happening without penetration of the abdominal parietes; on the high mortality attending such injuries, varying among different reporters from 58 to 92 per cent. in cases with operation, and on the comparative rarity of its occurrence. During a ten-year period, according to Campbell[1], only eight cases occurred in 13,060 surgical admissions to the Montreal General Hospital, which is favored with a large emergency service.

The manner in which this injury occurs may be by one of three methods, in the following order of frequency:

1. Compression of the intestine between the vulnerating force and the vertebral column or pelvis. This is most likely to take place in that portion of intestine hanging down in the pelvis.

2. Violent oscillation of the fluid contents of a loop of kinked intestine, resulting in its bursting. This is most apt to occur in that portion of the intestinal tract which is endowed with a long mesentery.

3. A laceration of the intestine at its mesenteric attachment by being carried beyond the range of its normal mobility. Those portions of intestine which possess a short mesentery are most prone to this insult.

If the damage is consequent on compression, the perforation may be anywhere and have any form and any size; whereas, if it has been produced by oscillation, the perforation will be found at the point of least resistance, namely, opposite the mesenteric attachment, and is usually round and small. The victims of this accident are to be found among those exposed to violence, chiefly young men, though occasionally active young girls are the sufferers.

1. Campbell: Ann. Surg., 1905, xlii, 601.

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Disease of the bowel wall, intestinal adhesions and hernia are the recognized predisposing causes of rupture. The immediate causes are: blows on the abdomen from flying pieces of lumber, a man's fist, the kick of a horse or man, or a club in the hands of an assailant; lifting heavy oojects, etc. Most of these causes, it will be observed, are of the sudden type, the impact occurring before the abdominal muscles have an opportunity to contract, catching them "off their guard," and so it happens that the rupture is usually directly underneath the spot where the blow was received.

REPORT OF CASES

CASE 1.—*Recovery.*—Mr. S., miner, aged 27, arrived at the hospital two hours after having fallen a distance of 20 feet in a mine, striking the abdomen on a plank that was interposed between the timbers of the shaft. A few scratches on the head and right arm were the only visible marks of injury. The patient complained of slight pain in the abdomen, but remarked that he felt better than he did an hour before. Right-sided rigidity was marked; the pulse was 80, the urine clear, and there was no vomiting. An hour later, the rigidity and pain continuing, the patient was operated on through a median incision. An opening was found in the lower ileum admitting the tip of the index-finger, from which liquid feces were slowly flowing. The opening was closed with a double purse-string suture, the abdomen carefully sponged, and a drain to the pelvis inserted. Recovery was uneventful.

CASE 2.—*Death.*—Mr. D., teamster, aged 30, was seen fifty hours after having been kicked by a horse in the left abdomen. For the history of this case I am indebted to Dr. J. A. Jeannotte, who, like myself, was called late to the case. Immediately after the accident the patient had rigidity, suffered some pain and presented only slight tenderness. Obstipation was present for the first thirty hours; then an enema brought away some feces and flatus. At the time I saw him he had all the classic symptoms of peritonitis, including copremesis. The pulse was 150, the temperature subnormal. One peculiar feature which I had never before encountered and which I am unable to explain was that the lower half of the abdomen was distended while the upper half was retracted. The only external sign of injury was a superficial wounding of the skin, consisting of parallel linear scratches on the right side of the abdomen just below the level of the umbilicus. These resembled the scratching of a child's face from falling on a gravel walk. There was no ecchymosis or discoloration. A diagnosis of rupture of the intestine as the cause of the general peritonitis was made, and immediate operation performed in the face of almost certain failure. Salt solution subcutaneously and medicinal stimulation were begun synchronously with the operation. A large median incision gave entry to the abdomen, which was full of pus and feces. Many recent adhesions were present, and lymph was plastered everywhere from the bottom of the pelvis to the diaphragm. Two perforations were found in the ileum opposite the mesentery, about a foot apart; the lower one 2 feet from the ileocecal valve; this was ragged, would admit one's thumb and poured forth liquid intestinal contents, whereas the upper opening was smaller, admitting only the tip of the little finger and was plugged with herniated mucous membrane. The openings were closed and the operation concluded as speedily as cleansing and abundant drainage would permit. The patient died on the perambulator before reaching the ward.

CASE 3.—*Death.*—Mr. P., miner, aged 30, was seen in consultation wth Dr. A. J. McDonald at 2 p. m., July 29. July 28 at 5 p. m., he was in a runaway accident, as a result of which he was thrown from the wagon, which was overturned, falling on the patient's abdomen. He walked unaided a square and a half to a hospital, and, as he complained of severe pain, morphin was administered. Enemas were given without result. There had been no vomiting and no singultus, and yet when I saw the patient for the first time twenty-one hours post trauma he was dying of peritonitis, without even the slightest evidence of injury to the abdominal parietes. Because of the rapidity with which he was advancing toward a fatal termination, a diagnosis of rupture high up in the intestinal canal was unhesitatingly made. He died three hours later. A necropsy was performed at 6 p. m. which disclosed a plastic peritonitis including the diaphragm, and the abdominal cavity full of fluid. On the convex aspect of the jejunum 6 inches from its origin, a rupture was found admitting one's thumb, with mucous membrane pouting.

CASE 4.—*Recovery.*—J. F., boy, aged 8, referred by Dr. J. A. Jeannotte, to whom the patient was sent from a neighboring town, on the evening of August 29, while fording a creek, fell, striking his abdomen against a stone. He complained greatly of right-sided abdominal pain and was put to bed, where he remained until sent to Leadville. Meanwhile cathartics were administered and the bowels moved, but no relief was obtained. He arrived at the hospital the night of September 11. Examination showed pulse 104, temperature 99.6, and a mass filling the right iliac fossa. A diagnosis of appendix abscess was made and operation immediately performed. A Kammerer incision came down on the abscess, which was evacuated. When the wall of the abscess was torn through there was disclosed a ragged perforation the size of a 25-cent piece in the convex aspect of the cecum. This was closed, and a normal postcecal appendix dug out of the adhesions with some difficulty, it being necessary to strip it out beginning at its base. Drainage was introduced to the inner side of the cecum, to the outer side of the colon and to the pelvis. Recovery being complete, the patient was discharged October 8. The fortunate termination of this case, despite the poor treatment inaugurated, should not lead us astray, for we have no reason to expect recovery to follow such neglect, whereas we have every reason to expect death promptly to ensue.

NECESSITY OF EARLY OPERATION

In the comparatively few cases with successful operation reported, the operations were performed within a few hours of the injury, and in most of them the presence of collapse, loss of liver dulness, fluid in the abdomen, distention, etc., that is, the absolute indications of surgical intervention, appeared very early. Not always, however, are the symptoms so importunate. Frequently they are very insidious in their onset. At times the patient *seems* to recover from the immediate effects of the accident, but subsequently develops signs of peritonitis. I say *seems* to recover from the immediate effects of the accident, but this is only apparent, not real, for as will be shown presently, so serious an injury to the intestine cannot pass symptomless, despite the fact that not a few cases are found in the literature, either with operation late or going to necropsy with the remark that no symptom of intra-abdominal lesion presented until the second or third day. More likely the milder symptoms were present but unperceived.

There is no doubt that the high mortality incident to this condition, which all statistics so far compiled exemplify, is to be sought apart from the general consideration of surgical technic, for we may justly claim a very lofty and gratifying technic in all abdominal operations. Neither can it be ascribed to the peculiar character of the intestinal lesion itself, as we have often in gunshot wounds of the bowel more numerous and more damaging injuries and yet a greater proportion of recoveries following operative interference. The reason is that we attack the gunshot cases promptly, while, on the contrary, we too often hesitate in these cases, awaiting classical symptoms which announce the gravest complication, thus passing the time of maximum safety by an avoidable and perilous delay.

A very satisfactory percentage of recoveries may be expected if we will enhance our diagnostic acumen, develop a keener sense of comprehension, a prompt recognition of certain initiatory signs and a ready interpretation of the significance of those early manifestations. It is not to our credit that Nature has occasion to call so vainly for assistance. That she is signaling for help is indubitable, and I am convinced that it is not a cipher message either. Clearly then it is our duty to apprehend the signal and to render efficient aid with prompt and timely operations.

Given a case in which a person has been kicked by a horse, has fallen on a blunt object striking the abdomen, has been run over by the wheel of a wagon or has sustained some other typical mishap consequent on which a rupture of the intestine has ensued, and I know of no better method of procedure to insure the patient's death than to wait for reaction to take place, giving morphin as soon as pain manifests itself in order effectually to mask developing symptoms of importance; to await the exhibition of the absolute signs of rupture, namely, vomiting, costal respiration, tympany, distention, loss of liver dulness, generalized tenderness, declining temperature, high pulse-rate, the higher the better, and above all the hippocratic facies, and then to operate, when death may confidently be anticipated either on the table or very soon thereafter.

SYMPTOMS OF INTESTINAL RUPTURE

A detailed consideration of the symptoms is worthy of attention:

Shock varies from very slight to the most profound. In some cases there is no deepening of the little shock that slowly succeeded the accident, while in others the shock swiftly increases with a rising pulse and a declining temperature; this divergence of the pulse and temperature is always a grave symptom. The absence of shock is inexpressive.

Vomiting is common though not constant. The more persistent the vomiting the more consequential is the sign. This symptom is due to the irritation of the peritoneum by the effusion of intestinal contents, and occasionally comes on early, though not infrequently it is long delayed, more especially if the intestinal contents are expelled directly into the pelvic basin.

Obstipation is very common in these cases, though often a slight amount of fecal matter may be voided from the lower bowel following an enema, as is seen in some cases of intestinal obstruction. This symptom loses some of its value, as we have a similar picture in traumatic or paralytic ileus. Moreover, in a suspected case the means essential to establish the existence of this symptom would not with propriety be pursued.

Frequent urination has been observed, and results from peritoneal inflammation in the paracystic region. It is a rare and a late symptom.

Pain is usually intense, localized or general. At times it is localized to the umbilical region or lower abdomen, rarely over the seat of injury, though more often it is generalized. Pain arises from peritoneal irritation, and hence is a constant symptom though varying in intensity; it appears early and continues unabated. It is deprived of some of its worth in this as in other conditions, by reason of the variable degree of pain endured by different persons before complaint is made.

The pulse is usually slow at first, gradually and steadily rising, though cases are on record in which a normal pulse was displayed for several hours post trauma. An increasing pulse-rate is a valuable indication, but it is to be remembered that it may not be initiated until late, at which time it is indicative of peritoneal absorption.

The respiration is said to be characteristic, of thoracic type and shallow. This I have not observed, surely not early enough to be of value. Should it be present it would be very significant, but its absence is insignificant.

The temperature is but slightly elevated within several hours, and as is well known results from toxic absorption, thus being of necessity a tardy symptom and not available for early diagnosis.

Formerly much stress was laid on the facial expression, but inasmuch as the peritonitis needs to be far advanced before the patient looks bad, this symptom is valueless except that its presence usually signifies impending death.

Loss of liver dulness, dependent as it is on the presence of gas in the abdomen, occurs usually as a late sign; so late that it is of trifling value. Furthermore, it may be simulated by a marked meteorism.

Abnormal areas of dulness consequent on hemorrhage may be present. This is more likely to occur if the intestine is torn from its mesentery, thus favoring hemorrhage from a large branch of one of the mesenteric arteries, or it may result from a concomitant rupture of the liver or spleen. Otherwise the symptom would be tardy, and then too might be due to effusion and plastic lymph. Should it appear early it would doubtless be accompanied by other unmistakable signs, so that its worth as an early symptom is inconsiderable.

Rigidity of the abdominal muscles is one of the most constant symptoms. It is almost, if not quite, impossible to conceive of a lack of effort by Nature to protect the subjacent structures in so serious an injury, unless prevented by intense shock, unconsciousness or profound alcoholism. It follows, therefore, that it is an invaluable sign in a suspected case, and should it continue for a few hours constitutes alone sufficient evidence on which to base a diagnosis of probable rupture, and to indicate surgical intervention. It is not subordinate in importance to any other symptom.

Local tenderness is of great value if one be able to eliminate superficial injury sufficient to explain the sensitiveness, and happily, there often is slight or no injury to the overlying structures. Besides, the tenderness rapidly increases in severity and in area.

WHEN IS OPERATION WARRANTED?

The longer the time since the accident and the more numerous and the more marked the symptoms, the easier the diagnosis and the greater the security felt in such diagnosis; and conversely, the shorter the time since the accident, the fewer the symptoms, and these perhaps not very evident, the greater the difficulty of diagnosis. But it is just at this early period when the symptoms are often slight and the conclusion most difficult that the important decision should be made if we are to reduce the mortality-rate to its legitimate rank. As has been mentioned, many of the symptoms declare themselves late, and when they do appear do not herald the rupture itself, but proclaim the complicating peritonitis which procrastination has made possible. The only disparity of opinion arises relative to the diagnosis; or more accurately, the disagreement is in regard to what minimum symptoms justify operation. Once the diagnosis is made, we are all agreed that the importance of prompt and expeditious operation cannot be overemphasized.

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The history of the case may now and then be misleading, for it might be assumed that the vulnerating force was insufficient to produce rupture, and yet a rupture be present. This is the more likely to happen in the case of hernia with contents, in which event even a slight blow over the hernia could produce rupture of the intestine by reason of its being closely confined with no opportunity of hasty escape. Nevertheless, the history is obviously of primary importance. Frequently no external sign of injury such as bruise, laceration or abrasion of the skin exists, so that the amount of injury to the abdominal wall gives not the slightest indication of the degree of visceral damage. Further, any injury to the abdomen may be associated with grave damage to the intestine.

Few of the other serious conditions are likely to be confounded with traumatic rupture of the bowel. Intra-abdominal hemorrhage may for a time simulate this condition, but one would expect to find the signs of hemorrhage most marked, namely, air-hunger, anemia, blanched skin, thirst, restlessness, faintness, free fluid in the abdomen, etc. Of course, both conditions may be coexistent. Nevertheless, the differentiation between these two conditions is not of the utmost importance as the treatment is prompt surgical intervention in both, and a surgical diagnosis is sufficient in such cases; in fact, much valuable time may be wasted by an effort at too refined discrimination. Take, for example, a man who has been kicked by a horse but has not sustained a serious intra-abdominal lesion. What occurs? He is knocked down or thrown a few feet, the "breath is knocked out of him," he is pale, has a weak pulse, is dyspneic and looks distressed; he may even vomit; but within a little while he recovers his color, his pulse becomes normal, his respiration is easy and he looks and feels well. In other words, he recovers his usual feeling of well-being in a short time with a subsidence of all symptoms. Take, on the other hand, one who under the same circumstances has sustained a rupture of the intestine. Some of the symptoms disappear, but some of the more important incipient symptoms endure; he does not feel much better even after two or three hours; the symptoms do not disappear, though they usually subside somewhat. That is to say, we have a persistence of the initial symptoms, particularly rigidity and pain, though the pain may be slight. *This persistence of the initial symptoms with the history is sufficient to warrant operation.*

To discover the early signs and in order to detect their continuance, which is so momentous, these patients require the most observant supervision during the early hours following injury. The presence then of rigidity with pain or tenderness leads to a diagnosis of probable rupture and is sufficient to defend the propriety of exploration. Finally, the danger of an infrequent needless operation is a nullity contrasted to the frolic with death by delaying surgical intervention in the case of rupture.

Varieties of Authors.—It may be said that there are three kinds of authors. First come those who write without thinking. They write from a full memory, from reminiscences, it may be, even straight from other people's books. This class is the most numerous. Then come those who do their thinking whilst they are writing. They think in order to write, and there is no lack of them. Last of all come those authors who think before they begin to write. They are rare.—Schopenhauer.

DUODENAL TOXEMIA FOLLOWING RUPTURE OF THE DUODENUM

WITH REMARKS ON EXTRAPERITONEAL RUPTURE AND A REPORT OF TWO CASES *

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That a toxemia other than bacterial is a factor in the mortality of extraperitoneal rupture of the duodenum, an observation of two cases has convinced me. The fact that there was something different from the ordinary type of death from peritonitis was evident. The notes on the history sheets were made independently, and it was only later that the similarity of the observations was appreciated. The picture was especially emphasized in the second case in which the following statement was made evidently as a summary before the history was filed:

> The appearance of the patient was almost suggestive of delirium tremens or more of an active toxemia. There were no positive signs of peritonitis, no vomiting and the bowels moved freely. The patient presented the appearance of death from toxemia other than bacterial.

The well-known observations and studies of Maury,[1] Matthews[2] and others give emphatic support to this assumption. Whether the toxin comes from the secretion of the mucous membrane of the duodenum or from the bile which has not been rendered harmless by dilution and colloidal suspension or from the pancreatic juice may be open to discussion. In relation to possible death from pancreatic secretion it may be said that in only two cases, one of my own and one other, have I been able to find a fat necrosis, although Richter[3] has proved experimentally that a perforation of the duodenum may give rise to a fat necrosis. Wilms has drawn attention to the fact that high intestinal obstruction produces death with extreme rapidity and suggests that the patients succumb to toxic absorption resulting from decomposition of stomach and intestinal contents—an assumption that, it would seem to me, lacks clinical or experimental support.

In both of my cases the post-mortem confirmed the belief that there was not a peritonitis sufficient to cause death. The second patient did not vomit after the operation, his bowels moved freely, and yet death supervened at the end of fifty hours. The case histories are appended.

A study of the literature served to emphasize the high mortality in rupture of the duodenum. In the ninety-four cases studied there have been only seven recoveries. This may be partly explained by the toxemia complicating this condition as noted above; but a considerable part must be attributed to the failure of diagnosis and to the inability of the surgeon to suture these ruptures by exposure after Kocher's method. I experienced the same difficulty in the first case, but in my second I fell on the method I have described elsewhere, by which the duodenum was mobilized through an incision in the

* Read before the Western Surgical Association, St. Louis, Dec. 20, 1913.

1. Maury, W. D.: Death in Acute Intestinal Obstruction and Kindred Conditions, Due to Physiologic Disturbance. Study I. Has the Duodenum a Toxic Internal Secretion? THE JOURNAL A. M. A., Jan. 1, 1910, p. 5; Is Death in High Intestinal Obstruction due to Absorption of Bile? Ann. Surg., 1907, xlvi, 567.

2. Matthews, S. A.: One of the Functions of the Duodenum, THE JOURNAL A. M. A., July 23, 1910, p. 293.

3. Richter, H. M.: Perforating Duodenal Ulcer with Fat Necrosis, Quart. Bull. of Northwestern Univ. Med. School, xii, 131.

posterior colic mesentery to the right of the duodenum. I was surprised at the simplicity and freedom of exposure.

A study of the cases shows that extraperitoneal rupture especially is rarely discovered at operation. Meerwein,[4] who reports sixty-four cases of all types of duodenal rupture, notes that of the twenty-eight cases with operation, in six the rupture was not found until post-mortem. In a collection of twenty-four reports of cases from various London hospitals by Berry and Giuseppi,[5] thirteen patients had been operated on and the rupture discovered in seven only, while in six the rupture had been overlooked to be found at post-mortem. Furthermore, a review of these cases shows that practically all cases discovered were intraperitoneal ruptures. Most of the extraperitoneal were overlooked at operation, an error which would have been avoided by routine examination and, if necessary, exposure of the third portion of duodenum. The necessity for this is emphasized when we find that duodenal rupture is much more common than ordinarily supposed. Thus Gage reported 10 cases in 78 intestinal ruptures; Hertle,[6] 15 in 86, and Berry and Giuseppi, 24 in 132. Therefore, one should urge most careful observation of the duodenum in all traumatic cases. The transverse colon and omentum should be turned up so as to give a perfect exposure of the root of the mesentery and the retroperitoneal duodenum.

It is unnecessary here to enter into a complete discussion of the symptomatology, diagnosis and treatment of rupture of the intestine. It may be in place, however, to emphasize some of the salient features pertaining to rupture of the duodenum.

A study of the combined series of cases of intestinal rupture of Berry and Giuseppi, and Hertle, 132 and 136, respectively, should give a fair example of the various etiologic factors, since they are collected from city hospitals on one hand and from the literature on the other. The summary follows:

Blow	70
Run over	61
Kick	56
Squeeze	33
Fall	31
Miscellaneous	17
Total	268

Thus we see that approximately 70 per cent. comes from blows, run-overs and kicks. One should formulate a general rule that rupture is to be suspected in any injury in which there is a violent impact of a hard substance against an abdominal wall which occurs so suddenly that the muscles are caught unawares, as it were, and have not time to contract and protect the abdominal contents. The duodenum, though but a few inches in length, because of its fixed position in front of a bony promontory is especially liable to injury — Berry and Giuseppi, 20 per cent. of cases; Hertle, 13 per cent.

SYMPTOMS AND DIAGNOSIS

While the diagnosis is often difficult, in a majority of cases it can be made if certain facts are borne in mind.

The diagnosis will stand or fall, generally on five factors: First, the history of a severe sudden blow on the abdomen; second, abdominal rigidity; third, severe pain; fourth, local tenderness; fifth, insult vomiting. These are mentioned in the order of their importance.

Without the presence of sectional or general rigidity, we must be slow to make the diagnosis, except in retroperitoneal ruptures; and it is here particularly that the duodenum comes into question. It is the most important and valuable sign. Almost all of the patients complain of severe and continued pain. The histories again and again note the pain as "excessive," "severe," "intense."

Localized tenderness is also of great value, particularly in retroperitoneal-duodenal rupture. Nausea and vomiting shortly after the injury, which I have elsewhere designated as "insult vomiting," is also a valuable sign.

I have particularly excluded shock from the essential signs since it is frequently absent, and its presence aids us little in arriving at an opinion. The vomiting, distention and other signs of a subsequent peritonitis are also omitted. Berry and Giuseppi have made the following classification of the symptoms in fifty-nine of their cases:

	Present	Absent
Severe pain	51	..
Vomiting	43	2
Shock	28	6
Local tenderness	35	2
Rigidity	50	4
Distention	11	14
Added dulness	18	14
Rising pulse	37	6

Intraperitoneal rupture of the duodenum shows the symptoms above numerated plus the signs of a rapidly developing toxemia, a rapidly rising pulse, often with an active delirium. Extraperitoneal rupture lacks at times the abdominal rigidity, but the tenderness here is localized, the pain and distress is great, and if operation is delayed, a rapidly developing toxemia is present and vomiting is more constant.

TREATMENT

Experience and judgment both teach that an immediate laparotomy is indicated in all cases in which there is any probability of rupture, and in the ordinary case the general principles of intestinal surgery should be followed. In rupture of the duodenum, however, there are several factors to be considered: First, the possibility of overlooking the rupture; second, the possibility of gangrene of the loop; third, the probability of retroperitoneal infection; fourth, the fact that the sutured bowel has no peritoneum covering it; fifth, the probability of toxemia from duodenal and pancreatic secretions.

The mortality in these cases has been much higher than in rupture of any other part of the intestine. In the statistics of all types, the mortality of Berry and Giuseppi was 87.2 per cent.; Hertle, 76.8 per cent.; Tavaststjerna, 76.4 per cent., while in the cases of ruptured duodenum of which I have been able to collect reports (ninety-four), there have been only seven recoveries, although Moynihan's patient, who lived 104 days and died of an obstruction due to a Murphy button, should be numbered in the recoveries. On the other hand, in Meerwein's case the serosa only was torn. These reports of cases were collected from literature and so were exceptional cases. Of the twenty-four consecu-

4. Meerwein: Beitr. z. klin. Chir., 1907, liii, 496.

5. Berry, James and Giuseppi, Paul L.: Traumatic Rupture of the Intestine, with a case of Recovery after Operation and an Analysis of the 132 Cases that Have Occurred in Ten London Hospitals During the Last Fifteen Years (1893-1907). Proc. Roy. Soc. of Med. London, 1908, ii, Surg. Section, p. 1.

6. Hertle: Ueber Stumpfe Verletzungen des Darms und des Mesenteriums (Full bibliography) Beitr. z. klin. Chir., 1907, liii, 297.

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tive cases reported from the London hospitals there was no recovery.

There is reason to hope, however, that if the surgeon is alive to the possibility of the injury, and searches for it in the manner suggested, the mortality may be materially lessened.

Lesions of the first and second parts may be exposed by Kocher's method, and those of the third part can easily be treated by the method of mobilization I have described.

What should be done after the rent is exposed? Is simple suture sufficient or should we resect and do a duodenojejunostomy or this with a gastrojejunostomy? A study of the reported recoveries should be of value.

1. Herczel found a rupture at the junction of the duodenum and jejunum. He sutured the rent after four days.

2. Meerwein[4] found an incomplete rupture, the serosa alone being torn. There was a large retroperitoneal hematoma. He resected from the middle of the descending part to the flexure, did a posterior gastro-enterostomy and a duodenojejunostomy 60 cm. from the gastrojejunostomy, operating seven hours after injury.

3. Steinthal found the duodenum torn from the posterior wall and from the jejunum. He operated eight and one-half hours after the injury, sutured the bowel, did a gastrojejunostomy and drained posteriorly.

4. Dumont found a tear at the duodenojejunal flexure. He did an oblique suture and drained anteriorly. Operation thirty-two hours after injury.

5. Wolf[7] found a tear at the junction of the horizontal and ascending parts. He sutured the tear. Operation one and one-half hours after injury.

6. Winiwarter[8] found a tear in the third part, sutured and drained anteriorly nine hours after injury.

7. Ropke[9] found a tear in the third part. He sutured the proximal end into the jejunum and the distal end into the stomach, made a cecal fistula to flush the bowel and closed the abdomen two hours after injury.

From these we may argue that if the tear is not extensive we may be justified in a suture even though the rupture is extraperitoneal, but that in bad cases gastrojejunostomy and a duodenojejunostomy are indicated. Drainage may be either anterior or posterior as the case may demand.

I append a brief summary of two cases observed in my service at Wesley Hospital.

CASE 1.—J. G. (No. 32,945), was admitted to hospital July 14, 1912. Fifty-two hours before entering the hospital, patient was kicked by a horse. The blow struck him in the median line just below the umbilicus. He fell and could not get up but was conscious, and was taken home in a buggy. He vomited two hours after being taken home, at first vomitus was of stomach contents. Patient said he took some black medicine and threw it up, giving a black vomitus. There was no other history which would lead us to believe there was blood in the vomitus. Vomiting continued accompanied by nausea and soon became fecal in character. Patient complained that stools were black. (This might have been due to the medicine taken.) Pain was constant and did not radiate. There was tenderness all over the abdomen, most marked above. Temperature was 102.8, the respirations 40, pulse 120; white blood-cells, 20,700, excess polymorphonuclear in type.

Immediate operation was performed and a perforation 4 inches below the pylorus, with laceration of the mesentery, was found. There was free blood-stained fluid in the abdomen. Mesentery was sutured, examination of the abdomen made and the duodenal rupture sutured with much difficulty. Kocher's method of exposing the duodenum was used, but owing to adhesions present from a previous infection of some type, the operation was difficult and the result unsatisfactory. The abdomen was closed in the usual manner, with drainage. Patient died six hours after the operation. (The history notes that the patient was not an alcoholic.)

Post-mortem disclosed peritonitis about the wound in the intestine only. There was no general peritonitis, but a violent injection of the peritoneum, and the subperitoneal tissue was very edematous.

CASE 2.—F. S. (No. 41,477), was admitted to hospital thirty-four hours after injury. He was struck in the anterior abdominal wall, in the epigastric region, by a wagon-pole and crushed between the wagon-pole and a telegraph-pole. He vomited shortly after the injury and then again twelve hours after he received the injury, after which time he vomited repeatedly. He complained of severe pain in the epigastrium but continued to work until near noon. Patient slept little that night and entered the hospital the next afternoon at 5 o'clock. There was marked abdominal distention with tenderness especially marked in the right inguinal region, but also in the left inguinal region and epigastrium. There were no external signs of violence. Pulse was 126, respiration 32, temperature 97.

Gas-ether anesthesia was given. When the abdomen was opened the intestines were seen to be injected as by a violent irritant. There was a thin faintly bloody serum, not purulent or apparently infectious. A plaque of fat necrosis was noted on the hepatic flexure of the colon below the cecum. The entire retroperitoneal tissue, including the pelvic connective tissue, seemed to be doughy as if filled with serum, and a considerable tumefaction was noted in the right side of the spinal column behind the peritoneum. Diagnosis of extraperitoneal rupture of the duodenum was made. Peritoneal incision between the duodenum and colon. This exposed the duodenum freely, in which could be seen a longitudinal tear about 1½ inch in length on a level with the common duct and below. The retroperitoneal mass contained bile and intestinal contents which had extravasated down to the right inguinal region, thus explaining the tenderness noted there. The wound in the intestine was sutured with two layers of linen. Drainage was carried out posteriorly underneath the colon below the costal margin by a tube leading to the duodenum and a cigarette drain leading into the right inguinal region, both being under the colon and under the peritoneum. A rubber tube with gauze inserted was carried out at the lower angle of the abdomen. The wound was closed by figure-eight sutures.

Following the operation the patient was given large amounts of normal salt both subcutaneously and by rectum. His pulse rapidly rose from 126 to 160, respirations from 32 to 44 and temperature to 103. It is noted on the history sheet that "patient was placed in a restraining jacket," "unable to give continuous tap water by rectum on account of restlessness of patient," "patient delirious," etc.

On the day after the operation his bowels began to move; he did not vomit and at the end of fifty hours he died. Post-mortem disclosed no peritonitis. The following note is on the history sheet: "The patient became very talkative and very restless, almost suggestive of delirium tremens, yet more of an active toxemia. There were no positive signs of peritonitis, no vomiting and bowels moved freely. The patient presented the appearance of death from toxemia other than bacterial. He was not an alcoholic. Death cardiac."

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7. Wolf: Ein geheilter Fall von Duodenal Rupture. Deutsch. Ztschr. f. Chir., 1911, cxi, 282.
8. Winiwarter: Zwei Fälle von Duodenalverletzung. Deutsch. Ztschr. f. Chir., 1912, cxiii, 582.
9. Ropke: Ueber die operative Behandlung der durch stumpfe Gewalt entstandenen Duodenal Verletzungen. Arch. f. klin. Chir., 1913, c, 925.

Community Health Conservation.—The best dollar any community spends is the dollar it invests in conservation of community life and health. It yields greatest and best returns.—*Bull. Chicago School of Sanitary Instruction.*

ULTRAVIOLET LIGHT AS A GERMICIDAL AGENT

EXPERIMENTAL INVESTIGATION OF ITS POSSIBLE THERAPEUTIC VALUE *

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As is well known, light-waves of sufficiently short wave-lengths are highly germicidal to bacteria suspended in mediums which are transparent to these waves. The question has arisen, therefore, whether or not it may be possible to make use of ultraviolet light in the treatment of local infections.

Ultraviolet light has long been successfully used by Finsen in the treatment of certain skin diseases, notably lupus vulgaris, and recently has been employed by ophthalmologists in the treatment of vernal catarrh and trachoma, also, it is asserted, with successful results. Its beneficial effect in these conditions, however, obviously is not necessarily due to a direct germicidal action, but possibly only to an irritant action on the tissues.

Since the cornea compared to other tissues of the body is relatively transparent to ultraviolet light, it follows that if it should prove impossible by this means to destroy bacteria within corneal tissue without at the same time producing undue injury to the tissue itself, the same negative results would be obtained in the case of all other tissues. For this reason the present investigation was confined to experiments on the cornea. These experiments were made in connection with an investigation by Louis Bell and myself on the effect of ultraviolet light on the normal eye, advantage being taken of the powerful light sources and apparatus therein employed.

Hertel,[1] in 1903, reported the successful use of ultraviolet light in the treatment of corneal ulcers, asserting that here it had a direct germicidal action on the infecting bacteria. He also made some interesting experimental observations in this connection, the most important one from a therapeutic point of view being that he was able to abolish the motility of cholera bacilli enclosed in a quartz cell and placed within the anterior chamber of a rabbit's eye, by exposing them to the action of ultraviolet light passing through the cornea. The source of the light was a magnesium electrode giving off rays with wave-lengths from 0.28 to 0.309 microns, and the exposures were from twenty-five to thirty minutes. The current was from 3 to 4 amperes. Later he obtained the same result with his cadmium-zinc electrode. Hertel assumed that the bacteria were actually killed, but he did not state that this was demonstrated by means of cultures. He also did not exclude the possibility that the effect on the bacilli was due to heat.

Hertel, in addition, tested the therapeutic action of ultraviolet light on a series of rabbits' eyes in which he had produced staphylococcic corneal ulcers and obtained "pleasing results." The resulting scars were slight and no changes could be found in the depths of the eyes. These results, however, it seems to me, lose any possible significance when it is considered that staphylococcic corneal ulcers artificially produced in rabbits as a rule promptly heal without any treatment, as I have frequently observed.

Hertel maintains that light of short wave-lengths has a greater deleterious effect on bacteria than on tissue-cells. This may be true for very short waves, but it is certainly not true for waves which are able to pass through the cornea. Thus, I found that severe keratitis could be produced by exposing the cornea through a crown screen to a quartz mercury-vapor lamp at a distance of 20 cm. for one and one-half hours, whereas staphylococci suspended in distilled water and exposed under the same conditions were not killed in six hours.[2] This experiment also would seem almost alone sufficient to prove the impossibility of destroying bacteria within the clear cornea without producing too much injury to the corneal cells. This being the case, it is almost inconceivable that bacteria could be destroyed in a cornea infiltrated with pus-cells and so made practically impassable to germicidal waves.

Hertel also attached importance from a therapeutic point of view to the conjunctival hyperemia and cell irritation produced by ultraviolet light. The practical value of these factors is questionable, and the latter factor would seem more likely to do harm than good in the case of corneal ulcers in which the cells already have sufficient unfavorable influences to contend with. In any case they would not justify the use of ultraviolet light in treatment of such conditions in the absence of any germicidal effect of the light.

In a later communication, Hertel[3] reported in detail a series of clinical cases of corneal ulcer treated by means of ultraviolet light from a cadmium-zinc electrode. The latter he recommended as being equal in efficiency to the magnesium electrode and at the same time more practical to use. Twenty-six cases were treated with light therapy alone, 8 cases with light therapy followed by Saemisch section, and 13 cases with light therapy followed by cauterization or the latter and Saemisch section. Thus in 21 out of his 47 cases of corneal ulcer, the result of the light therapy was so unsuccessful that cauterization or Saemisch section had to be undertaken. These results do not seem impressive for an agent that is supposed to kill the bacteria within the ulcers. Hertel exposed his cases from three to five minutes two or three times daily. At the most this was equivalent to a daily total exposure of only fifteen minutes. Now he had found that it required from twenty-five to thirty minutes to kill (or inhibit?) bacteria exposed through a perfectly clear cornea. How then could it be expected that an exposure of fifteen minutes would suffice to kill them in a purulent infiltrate which acts as a far more effective barrier to ultraviolet light?

In a communication to appear later, Louis Bell and I show that interrupted exposures to ultraviolet light with intervals of less than twenty-four hours have practically the same effect on the cornea as a continuous exposure of the same total length. For this reason by frequently repeating his exposures, Hertel undoubtedly increased the injury to the corneal tissue without at the same time, in all probability, obtaining a corresponding increase in germicidal action.

In his experiments and in the treatment of his cases Hertel employed no screens. Thus the cornea had not only to contend with the rays that could penetrate it,

* From the Pathological Laboratory of the Massachusetts Charitable Eye and Ear Infirmary.

1. Hertel, E.: Experimentelles über ultraviolettes Licht, Ber. ü. d. 31 Vers. d. ophth. Ges., Heidelberg, 1903, p. 144.

2. It is important to note that for these long exposures it is necessary to keep the bacterial container surrounded by cool water, as otherwise the bacteria may be killed in an hour or so by the accumulated heat. The lamp and screen used in this experiment are described later.

3. Hertel, E.: Experimentelles und klinisches über die Anwendung lokaler Lichttherapie bei Erkrankungen des Bulbus, Arch. f. Ophth., 1907, lxvi, No. 2, p. 275.

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but also with those stopped within the stroma and at the surface. As the rays stopped near the surface are evidently useless so far as killing bacteria within the stroma is concerned, it occurred to me that by screening them out and so decreasing the damage to the cornea, longer exposures might safely be used, thereby increasing the possibility of a germicidal effect within the cornea. The screen selected for this purpose was a crown glass, which permitted only waves greater than 0.295 microns in length to pass.[4] As will be seen, however, this procedure was unsuccessful. No germicidal effect on bacteria within the cornea could be noted even when exposures through this screen were used which were sufficient to produce severe keratitis and even injure the epithelium of the lens capsule.

As light sources in the following experiments the magnetite arc and the quartz mercury-vapor lamp were chiefly used. To obviate the remote possibility that the cadmium-zinc arc employed by Hertel might possess some special advantage, this arc was also used. That greater intensity was obtained with our cadmium-zinc arc and quartz lens than was obtained by Hertel is proved by the fact that not only severe keratitis but also marked changes in the epithelium of the lens capsule were produced.

The mercury-vapor lamp used was the Cooper-Hewitt model without the globe (220 volts, 3.5 amperes).

The magnetite arc was of the ordinary self-regulating type as known to trade, without the globe. The voltage was about 80, the amperage from 9.8 to 10. The light was passed through a quartz water-cell 5 cm. in thickness, and concentrated on the cornea by means of a quartz lens 4 cm. in diameter and 9 cm. in focal length, placed 20 cm. from the light source. In Experiments 6 and 7 still greater intensity was obtained by means of a second quartz lens 23 mm. in diameter and 15 mm. in focal length.

In the case of the cadmium-zinc arc, the same apparatus was used except that the electrode consisted of an alloy of equal parts of cadmium and zinc in a thin-walled copper cylinder, and was water-cooled. The water-cell was omitted. The voltage was about 80, the amperage about 6.8.

A number of experiments were first made by injecting staphylococci or pneumococci into the corneas of rabbits and after twenty-four hours exposing the resulting abscesses to the ultraviolet light. Healing did not seem to be hastened, but since recovery ultimately occurred, as it did also in the control eyes, these experiments are not regarded as sufficiently conclusive and are not given in detail. Experiment 1, however, in which tubercle bacilli were injected into the cornea, was perfectly conclusive since the resulting lesions continued to progress in both eyes alike. In the other experiments the exposures were made immediately after the injections, that is, with the corneas clear, so that the conditions were the most favorable possible for germicidal action of the light. The results in these experiments, moreover, are clear-cut, because if the light had killed the bacteria, abscesses would not have formed. This is proved by Experiment 2, in which in the control eye the bacteria were first killed by exposure to ultraviolet light before they were injected into the cornea.

4. Since this wave-length has been found to be the limit of transparency for the cornea, it would be expected that such a screen would protect the cornea from injury, the longer waves not being absorbed by the latter. As a matter of fact I have found that it does almost completely protect the corneal stroma, but permits severe injury or destruction of the epithelium, corneal corpuscles and endothelium.

EXPERIMENTS

EXPERIMENT 1.—April 10, 1912, a suspension of virulent tubercle bacilli is injected into each cornea of a rabbit.

May 1, each cornea shows a small tubercle. The right eye is exposed to the quartz mercury-vapor lamp through crown screen 1½ hours at 20 cm.

May 21, both tubercles have developed as usual. The animal is killed.

EXPERIMENT 2.—June 22, 1912, a suspension of *Staphylococcus aureus* in distilled water is injected superficially into the left cornea of a rabbit. The remaining bacterial suspension is then exposed at 20 cm. for three minutes to the quartz mercury-vapor lamp. (Culture taken proves that all organisms have been killed.) This suspension of killed staphylococci is then injected into the right cornea of the same rabbit.

Each cornea is exposed to the quartz mercury-vapor lamp at a distance of 0.5 meter for fifteen minutes.

June 23, both eyes show marked electric ophthalmia. The left cornea shows well-marked abscess. The right cornea shows only a faint haze along the tract of the needle.

June 24, both eyes show increase in electric ophthalmia, with haze of corneal stroma and central loss of corneal epithelium. The abscess of the left cornea has increased in size and there is now hypopion. The right cornea shows no abscess. Enucleation is performed.

EXPERIMENT 3.—Oct. 21, 1913, a suspension of *Staphylococcus aureus* in distilled water is injected into each cornea of a rabbit, the amount injected into the right cornea being three times that injected into the left. The left eye is then exposed for thirty minutes to the cadmium-zinc arc through a quartz lens (no water-cell or screen of any kind being used).

October 22, the right eye shows intense inflammatory reaction, with a large abscess of the cornea and pus in the anterior chamber. The left eye shows equally intense inflammatory reaction and a corneal abscess about half the size of that in the right cornea. The abscess shows discrete points evidently corresponding to colonies of bacteria.

October 23, abscesses of the two corneas are now about equal in size, (3 mm. in diameter). The anterior chamber of each eye contains pus. Epithelium is entirely absent from the left cornea (this being confirmed by microscopic examination). The right cornea shows loss of epithelium only in the vicinity of the abscess. Enucleation is performed.

The lens capsule of the right eye after fixation in Zenker's fluid is examined in flat preparation and shows slight changes in the nuclei of the epithelium evidently due to the action of staphylococcus toxins, but no changes similar to those seen after exposure to ultraviolet light. The lens capsule of the left eye shows, in addition to these nuclear changes, well-marked changes characteristic of exposure to ultraviolet light—swelling and granular degeneration of the cytoplasm of the epithelial cells. Histologically both corneas present the same picture, and each contains numerous large masses of staphylococci.

EXPERIMENT 4.—Feb. 8, 1913, a suspension of *Staphylococcus aureus* in distilled water is injected into each cornea of a rabbit. The left cornea is then exposed for thirty minutes to the cadium-zinc arc *through a crown screen* and quartz lens, the image being kept on the injected area.

February 10, there are abscesses of equal size in the two corneas. The left eye in addition shows severe electric ophthalmia with marked general haze of cornea and large central loss of epithelium which includes area of abscess. This eye also shows exudate adherent to the posterior surface of the cornea behind the site of the abscess, due evidently to injury of the endothelium by the ultraviolet light. Enucleation is performed.

The lens capsule of the left eye, after fixation in Zenker's fluid, is examined microscopically in flat preparation, and shows marked changes characteristic of exposure to ultraviolet light.

EXPERIMENT 5.—March 19, 1913, a suspension of *Staphylococcus aureus* in distilled water is injected into the cornea of a rabbit. The cornea is then exposed to the magnetite arc for forty-five minutes through the quartz lens, quartz water-

cell, and crown screen. This exposure in the case of normal eyes had been found sufficient to cause necrosis of the stroma cells and endothelium of the cornea, to cause hemorrhages in the iris, and to produce marked changes in the lens capsular epithelium.

March 20, there is abscess of the cornea. Marked electric ophthalmia is noted with loss of epithelium.

March 24, the abscess is larger. Enucleation is performed. Lens capsular epithelium (flat preparation) on microscopic examination shows marked changes, and the iris shows numerous hemorrhages characteristic of exposure to ultraviolet light.

EXPERIMENT 6.—Dec. 16, 1913, a suspension of *Staphylococcus aureus* in distilled water is injected into the cornea of a rabbit. The injected area is then exposed twenty minutes to the magnetite arc through a water-cell and a system of two quartz lenses. No screen is used.

As previously determined, with this arrangement an exposure of thirty seconds is sufficient to cause marked keratitis and destruction of the epithelium, while an exposure of twenty minutes causes complete destruction of the corneal corpuscles and softening and swelling of the stroma down to Descemet's membrane, and ultimately leads to vascularization and cicatrization of the cornea.

December 18, there is no abscess. Marked electric ophthalmia is noted. The cornea is hazy and epithelium is absent from three quarters of the surface of the cornea.

December 26, there is no abscess. The inflammatory reaction is almost gone. The cornea is softened and swollen.

December 29, the inflammatory reaction is increasing again (reaction of repair); the corneal tissue is very soft. Vascularization is well advanced.

Jan. 5, 1914, vascularization of the cornea is complete. The inflammatory reaction is subsiding.

January 9, the vessels are beginning to disappear. The cornea is leukomatous.

EXPERIMENT 7.—Dec. 19, 1913, the suspension is injected and the exposure made as in Experiment 6, except that the time of exposure is six minutes. This exposure is sufficient to cause softening of the corneal stroma.

December 21, marked electric ophthalmia is noted. There is an abscess at the site of the injection.

December 23, the abscess is smaller. A culture is taken. Enucleation is performed.

Culture shows abundant growth of staphylococci. Lens capsular epithelium shows marked changes.

CONCLUSIONS

The results of these experiments prove conclusively that ultraviolet light cannot under any conditions destroy bacteria within the cornea, even when the latter is perfectly transparent, without at the same time severely injuring the corneal tissue. Destruction of bacteria within the transparent cornea was obtained only when a light intensity and exposure were employed sufficient to cause complete destruction of the corneal corpuscles and intense injury to the corneal lamellae (Experiment 6).

Moreover, it does not seem possible that ultraviolet light could in practice be successfully used to destroy bacteria within a corneal abscess or ulcer, that is, when the cornea was no longer clear, even with the sacrifice of corneal tissue, as in the case of the actual cautery. For either the exposures would have to be impracticably prolonged, or such extreme intensity of light would be required that the heating effect would exceed that of the pure ultraviolet action. It is doubtful also if ultraviolet light of such intensity could be made available for therapeutic purposes.

It must be concluded, therefore, that so far as direct destruction of bacteria within any of the tissues of the body is concerned, ultraviolet light possesses no therapeutic value.

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A PRACTICAL METHOD FOR DETERMINING THE AMOUNT OF BLOOD PASSING OVER DURING DIRECT TRANSFUSION *

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It is obvious that it would be a great improvement in the therapeutic application of direct blood transfusion if there were some accurate method of determining, during the actual course of the transfusion, how much blood is being transfused. As with all forms of medication, so with transfusion, the correct dosage may be the determining factor in obtaining a proper therapeutic result.

Up to the present there has been no such method, and surgeons have generally followed some rough and ready rule, such as to transfuse for from fifteen to forty-five minutes, or until the donor showed distinct signs of acute anemia, or until the percentage of the patient's hemoglobin showed a rise.

An accurate method of estimating the amount being transfused would be of especial importance from two points of view: (1) in order to avoid any danger to the donor from the taking of an excessive amount of blood; (2) to determine when the patient has received enough to obtain the desired therapeutic effect.

Earlier studies on the blood-pressure of both patient and donor during transfusion have convinced us that variations in the blood-pressure are too irregular to be of the slightest assistance in determining the amount of blood which is being transfused. In fact, the compensatory powers of the body, in regard to the blood-pressure, are rather remarkable, the pressure of donor and patient often remaining practically unchanged in spite of the transfer of a considerable amount of blood. The variations in the pulse-rate of either donor or patient are likewise too irregular and too subject to disturbance from psychic causes to be of help.

The rise in the percentage of hemoglobin, on the other hand, when the patient's hemoglobin is low at the start of the transfusion, is a phenomenon which occurs with great regularity and is susceptible of very accurate measurement. In fact, for three years before the method of calculation to be described was followed, we and others used the hemoglobin rise as a rough guide in the course of transfusion. The question, however, of how high the hemoglobin can be raised in a given case, cannot be answered, except by precise calculation.

The principle on which our method of calculation is based is a simple arithmetical calculation. If two fluids, having different percentages of any substance in solution are mixed in unequal volumes, the percentage strength of the resulting mixture is the sum of the products of volume multiplied by the percentage of each solution, divided by the volume of the total mixture. Thus, if one volume of a 50 per cent. solution is mixed with two volumes of a 100 per cent. solution, the percentage strength of the resulting solution will be:

$$\frac{(1\times 50)+(2\times 100)}{1+2}=83.3 \text{ per cent.}$$

In order to calculate the exact amount of blood, and not merely the relative volume transfused, it is neces-

* From the Mount Sinai Hospital, New York; work done with the aid of the Eugene Meyer, Jr., Fellowship of the Mount Sinai Hospital.

sary to know the blood volume of donor and patient. As blood volume, even in health, undergoes slight variation, and there is at present no practical method for accurate determination of blood volume, it is impossible at present to know the blood volume in each instance with great accuracy. Nevertheless, a large number of experimental observations by various authors have shown that blood volume bears a rather constant relation to body-weight. The conclusions of different authors on this subject do not all agree; but from a large number of accurate determinations by various methods it has recently become clear that the original estimate of Welcker in 1858, accepted for many years—that human blood-weight is approximately one-thirteenth of the body-weight — is wrong, and that the actual proportion of blood is much smaller and corresponds more nearly to one-nineteenth of the body-weight.[1]

On this basis, disregarding for the time being possible variations in the blood volume, the approximate weight of blood of the donor and of the patient is easily calculated. If, then, it is determined that it is safe to take from the donor any known proportion of his total blood-weight, we have all the data necessary to figure out to what percentage the hemoglobin of the patient will be raised by transfusing this predetermined weight of blood.

An example will make this clear: The donor weighs 190 pounds; the approximate weight of his total blood is therefore 10 pounds, and if it is determined that it is safe to take one-fourth of his blood, then 2½ pounds can be taken. His hemoglobin is 100 per cent. The patient weighs 114 pounds; his approximate blood-weight is therefore 6 pounds. His hemoglobin is 30 per cent. The result then of mixing 6 pounds of 30 per cent. blood with 2½ pounds of 100 per cent. blood is expressed by the following formula:

$$\frac{(6\times 30)+(2.5\times 100)}{6+2.5}=50.5 \text{ per cent.}$$

It may be seen that the result of transfusing 2½ pounds of blood, or a quarter of the donor's blood volume, will be to raise the patient's hemoglobin from 30 to 50 per cent.

Observations made during the course of the earliest transfusions at which we were present indicated that if more than one-quarter of the donor's blood was taken, symptoms of collapse, ordinarily of short duration, were apt to supervene. We have, therefore, usually reckoned on transfusing that amount, although as much as one-third can often be safely transfused.

The donor should be sharply watched as soon as the hemoglobin rise of the patient nears a point that indicates that one-quarter of his blood has been transfused. Larger amounts of blood can be removed, if, when near this point, the flow be made intermittent by interruptions of the flow for a few minutes at a time.

Scattered warnings in the literature as to the danger of acute dilatation of the patient's heart from excessive transfusion led us, at first, to make a similar calculation as to the amount of blood which a given patient could receive. Experience, however, in over one hundred transfusions has shown that this is necessary only when there is a disparity between the size of patient and donor, as in the transfusion of children or small adults. Usually the circulation adjusts itself rapidly and easily to the increase of blood volume, and it is practically impossible (except in the preceding instances) for a donor, without collapsing to give up enough blood to embarrass seriously the circulation of an adult recipient. In fact, in both donor and patient, circulatory embarrassment resulting from transfusion appears to depend on the speed with which the blood is transfused rather than the amount transfused; and by transfusing slowly it is generally possible to avoid any unfavorable symptoms on the part of either.

In over 130 transfusions,[2] during which we were able to control the amount to be transfused, we saw no instance of any circulatory embarrassment. But we know of a number of other instances in which this did occur. We have records of two of these. The one was a case of subacute bacterial endocarditis resulting in death a few hours after the transfusion and showing, post mortem, numerous infarctions in the heart-muscle. The other was a case in which an unjustifiably large transfusion was followed by edema of the lungs and hematuria lasting two days. This was the type of case in which trouble could have been easily avoided if a calculation had been made, as there was great discrepancy in the sizes of donor and patient. The donor weighed 190 pounds and had 95 per cent. of hemoglobin. The patient weighed 97 pounds and her hemoglobin was 15 per cent. Calculation shows that if 2½ pounds of blood (equivalent to one-quarter of the donor's or one-half of the patient's blood volume) had been transfused the hemoglobin would have been raised to 31 per cent. Instead it was raised in twenty minutes to 52 per cent. (indicating that over 4 pounds of blood had been transfused[1]).

In cases in which cardiac insufficiency with edema is present (particularly as seen in severe grades of pernicious anemia) we are in the habit of putting the patient on the Karell diet for two days (no other food than 900 c.c. of milk a day and no water). The diuresis obtained gives room in the circulation for the blood to be later added by transfusion.

There are several possible sources of error in this calculation, due to variations in the blood volume. The first of these, of course, is due to loss of blood in acute hemorrhage. When the hemorrhage has occurred within a few hours of the transfusion, if it is possible to form some idea of the amount of blood lost, an allowance can easily be made for this. When the hemorrhage has occurred more than from twelve to twenty-four hours before the transfusion, it is probably unnecessary to make any allowance, because, after hemorrhage, the circulating blood very rapidly takes up plasma from the tissues, and this probably brings the blood volume to somewhere near normal. Variations in the blood volume undoubtedly occur in chronic anemias and other diseases, but our knowledge of them at present is too scanty to allow us to take them into calculation. Probably they are not great enough to affect the result seriously.

Another source of error which enters into practically every case, and for which it is impossible to make allowance, is the absorption of plasma from the circulation by the tissues. This is seen, for instance, in the almost continued rise of hemoglobin for some hours after transfusion. In practically every one of the forty cases in which the hemoglobin was estimated again within from

1. Behring: Beitr. z. exper. Therap., 1899, i, 1054. Haldane and Smith: Jour. Physiol., 1900, xxv, 331. Plesch: Ztschr. f. exper. Pathol. u. Therap., 1909, vi, 380. Smith: Trans. Path. Soc., London, 1900, ii, 311. Oerum: Deutsch. Arch. f. klin. Med., 1908, xciii, 356.

2. Performed by the various surgeons on the staff of the Mount Sinai Hospital.

a few hours to twenty-four hours after the transfusion, the hemoglobin percentage was found to have risen from 3 to 10 per cent. above the height reached at the end of the transfusion (exclusive, of course, of those cases in which hemorrhage continued). In all of the cases in which hemoglobin estimations were made within one or two hours of the end of the transfusion, it was found that most of the subsequent rise had already taken place. It appears, therefore, that concentration of the blood by removal of plasma goes on very rapidly, and it is obvious that some of it must go on even during the transfusion.

If we make any allowance for this, it will be to raise slightly the level to which it is safe to carry the hemoglobin, as, on account of the process of blood concentration, the apparent amount calculated from the hemoglobin rise will be slightly larger than the real amount already transfused at any given moment. Our experiences, however, in which accurate weighings of donor or patient were used to control the calculation, showed that, while these sources of error may exist, in most cases they are not large enough to affect materially the result of the calculation.

We have observations on the hemoglobin rise in ninety-nine transfusions. In thirty-two of these, calculations were made on the assumption that it was safe to transfuse one-quarter of the donor's blood volume; and these calculations were used as a guide in the transfusion. In the great majority of cases, the hemoglobin was raised to approximate the calculated amount. In only one of these cases in which the calculated amount was not exceeded was there any collapse of the donor. In nine cases the calculated hemoglobin limit was exceeded by less than 5 per cent., and in two cases it was exceeded by respectively 9 and 10 per cent. without any serious symptoms on the part of donor or patient.

It is possible, of course, not merely to calculate the hemoglobin rise to be anticipated from transfusing a given volume of blood, but also to estimate, from an observed hemoglobin rise, the volume of blood which must have been transfused. This is done by simple algebraic calculation, substituting the unknown factor, X, for the volume of blood transfused, in the preceding formula. Thus, the illustration previously given may be taken. Suppose the donor weighs 190 pounds and has a hemoglobin of 100 per cent. The patient weighs 114 pounds and has a hemoglobin of 30 per cent. The observed rise in hemoglobin is to 50.5 per cent. Then, substituting X for the unknown amount of blood transfused, we have the equation:

$$\frac{6\times30+(X\times100)}{6+X}=50.5$$

Simplifying which, we get: $X = 2.5$ pounds of blood transfused.

In order to test the accuracy of the method of calculation, we have by means of this formula calculated back from the observed rise in hemoglobin to the amount of blood transfused in eleven cases in which the amount of blood transfused was determined by accurate weighings of either donor or patient immediately before and after transfusion. The correspondence between the calculated and actually transfused amount has been surprisingly close, as the accompanying table shows.

In the weighings, of course, allowance was made for the fluids taken by donor and patient, as the case may have been, the fluids being carefully measured in each instance. It is noticed that, except in three instances, the agreement between the calculated amount and the observed amount of blood transfused was so close as to leave no doubt of the value of the calculation. In these three instances special disturbing factors entered. Thus, in Case 7, in which the donor lost a great deal more weight than he was calculated to have lost by transfusion of blood, the additional loss probably is partly accounted for by a severe collapse, during which exceedingly profuse sweating occurred. In Case 37, there was only a very small amount of blood transfused in proportion to the size of the patient; and here again the difference is probably accounted for by the loss of weight by sweating during the unusually long time (two and one-half hours) that the donor was on the operating-table. The discrepancy of almost a pound, in Case 45, is hard to account for, but was probably due to sweating.

It is noticed that in all of the cases in which there was a discrepancy between the calculated and the observed blood transfer, it was the donor who was weighed and the discrepancy was always in the same direction, namely, the donor apparently lost more weight than he should have, by calculation. In the three instances (Cases 16, 31 and 49) in which it was possible to weigh the patients, the agreement between the calculated and the weighed amounts of blood was strikingly close. In most of the cases, however, the patient was far too ill to be put on the scales before transfusion, and the patients' weights which are used as a basis of calculation are generally approximations arrived at from the weight which the patients were known to have had before illness. This, of course, constitutes also a slight source of inaccuracy in calculation.

BLOOD TRANSFUSION IN ELEVEN CASES

Case No. (New Series)	Patient		Donor		Per Ct. of Hb. Rise Observed	By Calcul. of Bl. Transf., Lbs.	By Wgt. of Bl. Transf., Lbs.	Determinations and Remarks*
	Wgt.	Hb.	Wgt.	Hb.				
	Lbs.	%	Lbs.	%				
5	160	30	190	90	44	2.5	2.7	Donor's loss.
7	160	45	144.50	90	58	3.4	5	Donor's loss; severe collapse; profuse sweating.
10	120	23	161.25	76	42	3.5	3.3	Donor's loss.
16	22.56	33	120	76	50	0.71	0.6	Patient's gain.
18	130	53	211.87	80	60	2.7	3	Donor's loss.
31	44.81	21	178.37	85	39	0.9	1.06	Patient's gain.
37	119	13	162.81	87	23	0.84	1.62	Donor's loss; slow transfusion; flow lasting 1 hr. 27 min.; donor on table 2½ hrs.
39	120	55	151.50	82	60	1.4	1.3	Donor's loss.
43	120	56	169	84	53	3.4	3.4	Donor's loss.
49	95	31	158.25	86	52	3	3	Donor's loss and patient's gain.†

* The calculations are based on the donor's loss or the patient's gain, as indicated respectively.

† The patient gained 2 pounds, 12 ounces. The donor lost 3 pounds, 4 ounces. The discrepancy is explained on the assumption that each of them lost 4 ounces by sweating.

A recent indirect transfusion by the syringe method in which, of course, the exact amount of blood transfused was precisely known, has also given us the opportunity to confirm the correctness of the calculation. In this case 900 c.c. (approximately 1.8 pounds) of blood were transfused. The patient's weight was between 150 and 160 pounds. His hemoglobin was 38 per cent. The hemoglobin of the transfused blood was 90 per cent. According to calculation, the patient's hemoglobin should have been raised to 47.3 per cent. by the transfusion of the 900 c.c. It was actually raised to 48 per cent. The calculation used was the following:

$$\frac{(8\times38)+(1.8\times90)}{9.8}=47.3 \text{ per cent.}$$

Close examination of the figures in the table reveals the fact that in a number of cases the amount of blood transfused was very large in proportion, either to the blood volume of the donor or of the patient. Thus, in Case 10, the donor, weighing 161 pounds, had approximately 8.4 pounds of blood; the 3.3 pounds which he lost was 40 per cent. of his blood-weight. He fainted on attempting to stand ten minutes after the transfusion, but was restored without stimulation, and had no further trouble.

In Case 43, the donor weighed 169 pounds, and had 8.8 pounds of blood, so that the 3.4 pounds of blood which he lost represented 39 per cent. of his total blood volume. He rose and walked away from the operating-table and had no symptoms of blood-loss whatever.

With regard to the amount that can be received by the patient, Case 31 is interesting. The child weighed 44 pounds. Its presumptive blood-weight was 2.3 pounds, and the amount transfused, therefore, was almost one-half as much as the child's own blood volume. The vessels were not depleted before transfusion, as this was not a patient who had been suffering from acute hemorrhage.

We have a number of other observations in which no weighings were made, but in which calculation from the hemoglobin rise showed that the amount of blood transfused must have been very large in proportion to the patient's own blood volume. Thus, in Case 4, Old Series, the hemoglobin was raised from 30 to 90 per cent., and two days later was 110 per cent. This was in a new-born infant suffering from melena neonatorum.

In Case 12, Old Series, a child of 4, suffering from hemophilia, the hemoglobin was raised from 11 to 70 per cent., and two hours after the transfusion it was 90 per cent. In this case the child was stuporous and had dilated pupils for two days after the transfusion, but recovered completely.

In Case 13, Old Series, also that of a child, which had a chronic anemia from osteomyelitis, the hemoglobin was raised from 24 to 75 per cent. in twelve minutes, with subsequent complete recovery. In adults there were never any such striking rises, simply because it would have taken the blood of several donors to produce such marked increase in the hemoglobin. It would seem, however, on general principles that certainly in persons past middle life, or with any tendency to arteriosclerosis, one should be cautious about transfusing more than perhaps one-quarter as much as the patient's own blood volume.

The method of calculation which we offer is applicable in nearly all cases which need transfusion. There is only one class of cases in which it cannot be applied, namely, cases which are not anemic, that is to say, cases in which the patient's hemoglobin percentage is approximately the same as that of the donor. Practically the only cases of this kind that come to transfusion are cases of acute hemorrhage in previously healthy persons. In these cases, of course, there is no hemoglobin rise at the time of transfusion. In over one hundred cases in which we have observed the hemoglobin closely, there were only four cases of this kind.

SUMMARY

1. It is as necessary to control the amount of blood transferred during a direct transfusion as it is to control the dosage in any other therapeutic procedure.

2. A simple arithmetical formula is given by which it is possible to calculate how much rise in the percentage of hemoglobin will be obtained by transfusion of a given volume of blood. The formula is:

$$\frac{\text{(Patient's blood weight} \times \text{patient's hemoglobin per cent.)} + \text{(weight of blood transfused} \times \text{donor's hemoglobin per cent.)}}{\text{Patient's blood weight} + \text{weight transfused (in pounds)}} = \text{Hemoglobin per cent. reached.}$$

The patient's blood-weight is estimated as one-nineteenth of the body-weight.

3. The amount to be transfused may be decided arbitrarily, with regard to the patient's need, or with regard to the donor's ability to give up blood.

4. It is always safe to take one-fourth of the donor's blood; it is often safe to take as much as one-third of the donor's blood volume, provided the transfusion is not done too rapidly.

5. Though the danger of overloading the circulatory system of the patient is not as great as has been thought, yet probably it is not wise to add more than one-fourth, or at most one-third, as much blood as a person of the patient's weight normally has. This needs to be taken into account only in children or very small adults, transfused from large donors, because in most cases a single donor will collapse before he can give enough blood to embarrass the circulation of a full-grown adult patient. If more than one donor is used this part of the calculation becomes of great importance.

6. By means of exact weighings of either donor or patient or both, before and after transfusion, in a series of eleven cases, we have shown that the formula which we give corresponds quite closely to the actual amount of blood transfused.

7. By using this calculation as a guide and determining before each transfusion the point to which the hemoglobin ought to be raised, it is possible to avoid untoward symptoms in either donor or patient. We have demonstrated this in a large number of transfusions.

8. The method is of value, not only for determining the amount of blood being transferred during direct (vessel to vessel) transfusions, but also for determining beforehand how much blood ought to be transferred during indirect transfusions (whether by syringe or some other method).

We wish to express our obligations to the surgeons on the staff of Mt. Sinai Hospital for the privilege of making these studies.

THE UNDERLYING FACTORS IN THE SPREAD OF TUBERCULOSIS*

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There are two broad phases in the communicability and spread of tuberculosis, which in orderly procedure are best discussed separately, (*a*) the social and economic side of the problem, and (*b*) the more strictly medical side.

THE SOCIAL AND ECONOMIC SIDE

In placing the responsibility for the spread of infection we must in the last analysis begin with the individual, rather than the institution. It is, theoretically, more the fault of the people than the fault of their surroundings. It is the fault of the people who make

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the homes. This great plague flourishes in the homes of the ignorant, amid poverty and squalor; but, as has been well said, it is not alone the buildings which make the slums, but the people who live in them. Of course, bad housing conditions play a profound rôle in the endemicity of tuberculosis, but even could we give every family an airy, clean house, so long as ignorance, carelessness, filth, dissipation and alcoholism existed, we would still have slums, infected houses and tuberculosis.

It is perfectly apparent that better housing conditions would be an enormous stimulus to better living and better home management; and therefore, while the first remedial step is education and uplifting among the poor and ignorant themselves, the second, corollary need, which is of equally pressing importance, is the improvement of physical conditions of living — of housing conditions. Next in importance in this relation comes the subject of conditions of labor or occupation; for, aside from faulty ways of living and bad places to live in, there are the many vile conditions of labor, which reduce the health and weaken the resistance of the individual, making him susceptible to superinfection or a fresh infection, and rendering him and his descendants less and less likely and able to bring into the world and rear healthy, robust children.

In mentioning conditions of labor, however, as an important element in the prevalence of tuberculosis, we must think clearly and understand that the many existing bad conditions are largely predisposing factors only, and that their true significance relates to the demoralization of the health, morals and social status of the individual, and to home conditions from inadequate wages. Because the morbidity from tuberculosis is high among a certain class of wage-earners, we must not jump to the conclusion that that kind of work specifically "causes" tuberculosis. What it really does is to reduce the general health and resistance of the individual. If such workers have the seed of tuberculosis in their bodies, as is often the case, undue fatigue, confinement and low wages give rise to the physical conditions necessary for the flourishing of the seed. There is no specificity of labor as a "cause" for tuberculosis. It is an enormous factor, but never a cause (eliminating infected workshops). It comes the nearest to being a cause where certain forms of dust are constantly inhaled, which act (in one way at least) by reducing the tone and resistance of the lungs themselves, and so predispose to the pulmonary localization and activity of already existing infection, or a fresh infection.

For ethical and hygienic reasons the common drinking-cup must go, but tuberculosis is the least likely of the infections (so far as adults are concerned) to be engendered in this way. The question whether or not this should be made to include the common communion-cup may be answered perhaps in the affirmative on account of the danger of certain infections, but so far as the spread of tuberculosis is concerned, this is a negligible factor.

It is thus recognized that the problem of tuberculosis is in a large sense a social and economic one. With such factors to contend with, having their roots deep down in the very basis of modern life and conditions, affecting millions of people, is it not right that we should at least pause to appreciate the vastness of our undertaking, and from its very vastness should we not draw resolve not only to pursue our aim indomitably, but to be patient in demanding immediate results, though it should be stated, in passing, that results are becoming strikingly apparent.

Thus let us neither forget nor be dismayed by the fact that our problem is to combat, one might almost say, the drift of the times, to raise through education, sanitary laws, medical hygiene and philanthropic effort the proletariat from their condition of dense ignorance and poverty, to enable them to secure suitable homes and teach them how to live in and manage them, and to improve the conditions of their labor, that there may be cleanliness and light, suitable care of the children, sufficient food and clothing, necessary hours of rest, provident and good habits and self-restraint, and available medical supervision. But having said this much, we have not said all, for we must perform the same Augean task for the tens of thousands of immigrants arriving hourly from Europe to swell the ranks of this great army of ignorance and poverty.

But there is one great satisfaction to be taken in the very breadth and vastness of this phase of the problem, namely, that it is not merely tuberculosis work, but public health work in whatever form of activity this shows itself. Antituberculosis work and all forms of public health work in general bear an increasingly apparent interdependence. It is not alone strictly antituberculosis measures which may be confidently looked to for results, but all the associated movements for the public welfare in health, morals and conditions, which are essentially allies. This is now fully recognized, and with the well-organized tuberculosis crusade pointing the way, other movements have followed along similar lines and the crusade of enlightenment and prevention of disease is becoming more and more a unit in its methods, aims and interrelationships.

THE MEDICAL SIDE

It is necessary next to consider certain salient features of the disease itself bearing on the question of the spread of infection. Two great factors in its communicability stand out:

1. Infection takes place from close personal association or contact with open tuberculosis, as by living with a consumptive or from living in a room or house contaminated by a consumptive. The great source of the infection lies in the carelessness of the individual consumptive in contaminating his surroundings by spitting about or not properly disposing of his sputum, or by spray infection from coughing (equally dangerous) without guarding the mouth with a paper napkin. His towels, bedding, table utensils, etc., are also a source of infection. The period at which a consumptive is most dangerous covers, of course, the second and third stages of his disease when the lung is breaking down and the sputum contains large numbers of living tubercle bacilli.

2. The age at which infection is most likely to take place is childhood. It should be borne in mind that adults, particularly healthy adults, have a very considerable resistance or immunity to tuberculous infection. Without discussing the question of the source of this relative immunity, it may be stated as a fact that it requires a prolonged exposure and implantation to give rise to pulmonary tuberculosis in an ordinarily healthy man or woman. In proportion as bad surroundings, faulty personal hygiene, bad conditions of labor, other infections, dissipation, etc., play a part in the life of the individual, by just so much is this natural or acquired immunity impaired or even broken. But the fact

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remains that the chance inhalation of tubercle bacilli, as they may float in the dust of the street, or in public meeting-places, or the occupancy for a night or two of an infected room or sleeping-berth, could hardly give rise to pulmonary tuberculosis in an adult.

This must not be misinterpreted as in any sense condoning infected dust or infected places. No inference can be drawn from this that spitting in public places, street-cars or on the sidewalks should be tolerated. On ethical grounds and because of the dangers of catarrhal infections, spitting should be (and is in many communities) a misdemeanor punishable by law. The danger of infection of children by such conditions is a very possible one; for the time at which this natural resistance is weakest is in childhood, and for this reason and because of intimate and prolonged contact with open tuberculosis in their homes, children furnish the great soil for implantation. For physiologic reasons which it would lead us too far afield to discuss, this infection during childhood does not as a rule develop into pulmonary tuberculosis at that time, but lies dormant in the lymphatic system or is latent until adult life, when it breaks forth or manifests itself in pulmonary localization. It is largely children infected by contact in their homes who furnish later the ever on-coming crop of consumptive.

Milk and meat from tuberculous animals also constitute a source of infection in childhood. Infection may also be hereditary, the direct transmission of the tubercle bacillus taking place from the mother to the fetus by placental circulation. This has been shown to occur in mothers with advanced pulmonary or miliary tuberculosis, but has recently been shown as also possible when the lesion in the mother is in the incipient stage or even latent or non-active at the time of the birth (Warthin).

During childhood and early adolescence this early tuberculous infection, glandular in type, may manifest itself not at all, or only in anemia, underdevelopment, general physical delicacy, etc. These children react to tuberculin and often have enlarged lymphatic glands, but there is no other way in the majority of instances of telling that they are tuberculous: but this is quite sufficient for the diagnosis, which is to be understood to mean that the moment a child reacts to tuberculin, it is conclusive evidence that it has been sensitized by the tubercle bacillus and that the moment a child is thus tuberculized, it becomes potentially at least a future case of pulmonary tuberculosis.

Not only does the general trend of expert opinion bear out this view in relation to time of infection, but there are also many clinical and pathologic statistical data to confirm it. The results of the tuberculin test — which, when properly performed and repeated, is recognized as being specific — in large groups of children in hospital practice, as reported by von Pirquet, Calmette, Hamburger, Frantz and others in widely different cities, warrants the statement that most children of the working class are sensitized by the time they reach 14 or 15 years of age. The same is true of post-mortem findings among the poorer classes. Evidence has been clearly accumulating as to the frequency with which the disease is found at necropsy; and with increased refinement in post-mortem work the percentages are increasing significantly. Nägeli reported definite signs of tuberculosis in 97 per cent. of all bodies examined consecutively. Hamburger in a large group of children reported post-mortem findings of 63 per cent. with tuberculous lesions between the ages of 7 and 10 years and 95 per cent. in those between 11 and 14 years of age. Ghon's post-mortem statistics from St. Elizabeth's Hospital in Vienna show that by the end of the third year from 6 to 8 per cent. are infected, the percentages rapidly rising until by the fourteenth year the infection reaches 92 per cent. It goes without saying that by no means all these patients would have developed pulmonary tuberculosis clinically had they lived; indeed, this early infection is looked on by many as a source of immunity to subsequent reinfection, but such statistics furnish valuable evidence of the time when primary infection takes place.

There arises here an interesting paradox, for while we know that infection with tubercle bacilli is so largely universal among the poorer classes in our cities, yet we also know that the death-rate from tuberculosis among urban populations has been steadily decreasing. To what is this due? Is it due to strictly antituberculosis measures in association with preventive and curative measures against disease in general? Is it due to institutional care and improved conditions of living? Or is it due to some deeper cause, a development of increased resistance, specific immunity or allergy (von Pirquet) in urban populations themselves? Recent discussion has concerned itself very much with this phenomenon, and authoritative opinions differ.

Thus Newsholme points out that, while the death-rate from tuberculosis is nearly always greater in urban than in rural districts, the countries showing the most urbanization have secured the greatest reduction in and the lowest death-rate from tuberculosis. The conclusion that he draws from this fact is that the death-rate from tuberculosis has declined to the greatest extent in those countries in which the ratio of institutional to domestic relief has been highest. A consideration of all the facts, he says, justifies the conclusion that the substitution of institutional for domestic relief for the consumptive poor has been historically the main factor in the reduction of this death-rate, and in a later paper he repeats that had it not been for the steadily increasing extent of institutional treatment of the sick, and especially of the consumptive sick, which has characterized most of our great centers of population, we should have experienced, not the decline of tuberculosis which has occurred, but a great increase in its prevalence. With this view I am in entire accord.

On the other hand, a no less distinguished investigator than Karl Pearson has suggested that the selective process of many years of heavy mortality from tuberculosis has left us with a more immune and resistant population. He would have us change our views as to the value of hospitals and sanatoriums in the prevention of tuberculosis, and devote all our efforts to raising the resistance of the individual and the race. In brief, he denies the value of our general campaign, says that we are all tuberculized, and that the only efficient source of prevention lies in developing this communal or race immunity, which is largely a matter of environment and heredity. T. D. Lister goes so far along these lines as to say that were it for a moment to be granted that it is possible to control the spread of tuberculosis by preventive measures, then the service rendered to urban populations would be dangerous instead of beneficial, because the development of what he considers the only important factor, namely, increased communal resistance, would be ignored; and he further adds that in his opinion the adult death-rate from tuberculosis may be

taken as a measure of the loss of resistance to latent tuberculosis acquired in childhood.

A phase of this latter view is seen in much recent literature based on the studies of Roemer, Hamburger, von Pirquet, Baldwin and others, which has been recently emphasized by the last-named investigator, who believes that a primary infection in childhood is of value as a protection against subsequent reinfection by the production of a specific allergy or changed condition. As an illustration of this view may be cited his belief that the development of a strong allergy is at least one reason why miliary tuberculosis is not more frequent during relapses and extensions of pulmonary tuberculosis, particularly since we know that the bacilli themselves are often free in the blood-stream. Applying this, he feels that most adult tuberculosis is not due to a new infection or reinfection from contact, because the allergy of a childhood infection, so universally present, has protected against this, but that most adult tuberculosis is due to a lighting up of the disease from the spread of autogenous superinfection brought about by extraneous conditions of environment. Thus he argues that adults are very little endangered by close contact with open tuberculosis and not at all in ordinary association; childhood is the time of infection, youth the time of superinfection, and that from extension of, the primary disease. With this view, except as it might imply a relaxation of any of our usual precautionary measures against the possibility of infection among adults by contact, I am largely in accord, as stated above. Such theories inevitably lead back to the fundamental principle of eugenics, which lie not strictly in the survival of the fittest, not strictly in an attempt to rear a race of men and women whose resistance is attuned to living and surviving in a germ-laden world and who are capable of withstanding an utterly vile and vicious environment, but rather in forming a pure, healthy and happy environment, in making the world a fit place for all to live in, and then in producing the best and ablest race both physically and mentally to inhabit that purified environment (Moore).

Certain phases of the views quoted above appear radical and perhaps unwise general teaching (see Pearson), but whatever the element of error or of truth — and the truth probably involves a middle course—these views have at least served the purpose of calling the attention of those interested in the crusade to this very important element of racial and communal resistance, whether natural or acquired by early infection, which we have perhaps been inclined to overlook and neglect, and point to the practical necessity for directing every effort by good food, rest and recreation, by airy schools, playgrounds, inspection and supervision, to raising this quality of resistance, particularly in childhood and early adult life.

It may be stated as a fact that tuberculosis is the most common infection of childhood, and as well pointed out by Philip, we must get rid of the artificial distinction between so-called medical and surgical tuberculosis. From the scientific point of view, the most slender seedling of tuberculosis is potentially significant. It is impossible to say which tuberculous seed will be cast off and which will mature. Inoculation may occur through the mucous membrane of the gastro-intestinal or respiratory tract, or the skin, and whether or not it will spread from the lymphatic system, which is the first site of this early infection, and develop into pulmonary tuberculosis later depends largely on the child's vitality and resisting powers through its living tissue cells. In other words, this quality of natural or acquired immunity may hold the infection dormant; may heal an active lesion in its incipiency or localize it in the glands or bones; or may give way with resulting meningeal, miliary or pulmonary involvement. The course of events which supervenes is dependent largely on extraneous circumstances, on the amount and character of the tuberculous infection, on the number and character of the acute infections to which the person is exposed; on his enforced environment and to a considerable extent on inherited qualities. Philip says:

> The problem can only be solved effectively by a better understanding of the physiologic needs of developing life and a corresponding renovation of the nurseries and schoolrooms of the nation. It is folly to dream of transferring all tuberculous children to preventoria or sanatoria. This plan is to plead ignorance of the essential needs of the problem. The home of the poor man must be made the nursery of healthy children and cease to be the breeding-ground of tubercle-tainted wastrels. Each recreated home is an effective preventorium against tuberculosis.

It will thus be seen that the problem of prevention, to be effective, even as limited to the medical aspect of the communicability of tuberculosis, must take into account not only the care and isolation of the consumptive himself, but also the care and development of the children who have already been infected or who may be exposed to infection, and probably the development of a specific racial immunity.

But when we view as essentially one, as we must do, the two broad phases of the problem which I have attempted to outline, namely the social and economic conditions, and the more strictly medical conditions responsible for the prevalence and spread of tuberculosis, the point previously emphasized is brought forcibly on us—how very apparent is the interdependence to-day of the tuberculosis campaign and all efforts looking to the common welfare! Let me repeat that it is not alone by the strictly antituberculosis campaign that we may confidently expect to control tuberculosis, but by all allied movements looking to improvement of the health, morals, or condition of the people. Folks says:

> If our task is the more difficult because it is bound up with every phase of modern civilization, it is equally true that every substantial advance in other lines assists our cause.

For instance, it has been pretty conclusively shown (Reinicke) that wherever the death-rate from typhoid fever is reduced, through the introduction of pure water, numerically by one, there is a simultaneous reduction in the general death-rate of from two to three. What is true in this case is equally or even more strikingly so in relation to other infections. Think of the vista of accomplishment which opens up before us, when we know, as we do know, that more than 80 per cent. of all deaths are due to preventable causes!

Thus it is apparent that the movements against infant mortality, venereal diseases, alcoholism, the infectious fevers, cancer, procreation of mental defectives, and the correlated campaigns for better housing conditions, better hours and conditions of labor, child-welfare work, etc., all these movements, public or private, of whatever scope and by whatever methods they proceed, are all working to a common end, the welfare of the race, and as such are prototypes and allies of each other and of

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the greatest of them all, the tuberculosis campaign. They are all campaigns of preventive medicine, based on scientific development and attempting largely by education to carry the message of health and right living into the homes and very hearts of all the people.

1932 Spruce Street.

BINASAL HEMIANOPSIA OCCURRING IN THE COURSE OF TABETIC OPTIC ATROPHY

CHARLES R. HEED, M.D.
AND
GEORGE E. PRICE, M.D.
PHILADELPHIA

That binasal hemianopsia is a rare symptom (we believe that it should be considered as a symptom and not as an entity), may be inferred from the small number of instances recorded.

The impossibility of a single lesion producing binasal hemianopsia is generally accepted. Gowers[1] writes of binasal hemianopsia as being the rarest of all symptoms of disease of the chiasm, and further states that it can result only from a lesion which involves each side of the chiasm and spares the central portion. He adds that an irregular nasal hemianopsia may appear as the result of a tabetic optic atrophy and states that the only case he had observed was of this variety. Oppenheim[2] asserts that nasal hemianopsia resulting from a lesion limited to the external fibers of the chiasm is a very rare occurrence, but does not deny its possibility. Purves Stuart[3] holds the view that nasal hemianopsia may result from lesions at the lateral extremity of the chiasm interrupting the course of the non-decussating fibers. We, however, are in accord with those who believe that nasal hemianopsia cannot result from such a lesion, which view is admirably defended by William T. Shoemaker,[4] who refers to the investigations of Henschen, Dimmer, Hosch, von Monakow and others as proving that the uncrossed fibers are at no point in the chiasm found as an isolated bundle.

Herschel[5] and Coppez[6] have reported cases of binasal hemianopsia which they believe were of central origin. Herschel's supposition was that his patient had two symmetrical hemorrhages in the occipital lobes, while Coppez considered his case due to thrombi in both occipital lobes following cardiorenal disease.

Daae[7] has reported a case of probable centric origin. The reviews of his paper would seem to indicate that the condition was probably an abiotrophy, as five other members of the same family are reported as being similarly affected.

That in the majority of instances the symptom results from more or less symmetrical lesions of the optic nerves is shown by an analysis of the cases recorded. Shoemaker in 1905 collected eighteen cases of binasal hemianopsia to which he added one of his own. Since that date, we have found but one case reported, that of Coppez, which, with our case, would make twenty-one. Of this series, in three cases neuroretinitis was present, in two traumatic optic atrophy, two were optic neuritis associated with brain tumor, two were tabetic optic atrophy, two chronic interstitial optic neuritis, two secondary optic atrophy, one primary optic atrophy, and one traumatic optic neuritis. Thus in fifteen out of twenty-one cases, or 71 per cent., the symptom could be traced to optic nerve disease.

At first glance it appears strange that in only one instance, the case of Mooren, has nasal hemianopsia been reported as occurring in hysteria. Gowers considers it remarkable that hemianopsia of any variety so seldom appears as part of the manifestations of hysteria, but we believe that this fact is due to lack of suggestion. If hemianopsia were a common symptom of other conditions and thus brought to the attention of our hysteric patients, we believe that it would occur more frequently in this class, just as the clinic of Charcot developed the extraordinary types of major hysteric convulsions so rarely seen at present, at least in this country.

Another fact of interest is the absence of binasal hemianopsia in insular sclerosis when there are symmetrical lesions of the outer halves of the chiasm. A sclerotic area in the center of the chiasm is a comparatively frequent occurrence in this disease, yet bitemporal hemianopsia does not as a rule follow. We believe that this is due to the tendency of the disease to spare the axis cylinders while destroying the rest of the nerve.

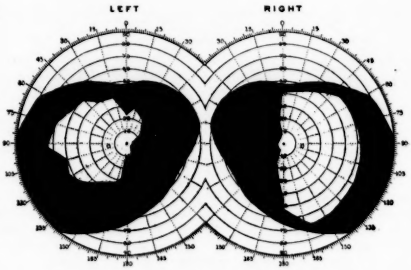


Chart 1.—Form field, 10 mm. object, April 4, 1912.

Rakowicz[8] of Dresden in 1895 reported a case which in many respects is similar to the case we report. The patient, a woman, aged 50, complained of failing vision. Examination disclosed a suspicious pallor of both optic nerves and typical nasal field defects. At the end of five and a half months vision was reduced to nil in right eye; in left eye, fingers when held closely. He reviewed the subject in a thorough manner and concluded that binasal hemianopsia could not result from a lesion of any part of the chiasm and believed that it was simply a condition or symptom of grave prognostic value occurring rarely in optic atrophy.[9]

A report of our case follows:

History.—O. N., man aged 48, German, unmarried, stocking-weaver, applied to the Wills Hospital, Dr. Sweet's service, April 3, 1912, complaining of failing vision progressing slowly for the past three months, so that now he cannot see to do his work. There was no history of previous ocular disease,

1. Gowers: Diseases of the Nervous System.
2. Oppenheim: Text-Book of Nervous Diseases, translated by Alexander Bruce.
3. Stuart, Purves: The Diagnosis of Nervous Diseases.
4. Shoemaker, William T.: New York Med. Jour., February, 1905.
5. Herschel: Deutsch. med. Wchnschr., 1883.
6. Coppez: Jour. méd. de Bruxelles, November, 1911.
7. Daae: Norsk. Mag. f. Laegevidensk., 1869, xxii.
8. Rakowicz: Klin. Monatsbl. f. Augenh., 1895.
9. Other cases consulted:
Veasey: Ophth. Rec., 1897, vi.
Mooren: Ophthalmometrische Beobachtungen, 1867.
Burnett: Arch. Ophth., 1900, xxiv.
Lang and Beevor: Tr. Ophth. Soc. of the United Kingdom, 1894.

and the family history was unimportant. The patient's general health was good. He had had a suspicious luetic lesion twenty-four years ago.

Visual Examination.—Visual acuity: O.D., 4/60; O.S., 6/60. Lids, lacrimal apparatus, conjunctiva and cornea appeared healthy. Rotations of the muscles were good; there was no history of diplopia, and none was elicited with the colored glass. Pupils: right, 4.5 mm.; left, 4 mm.; no reaction to light, direct or consensual. Pupillary (Wernicke's) inaction test absent. Both eyes showed a sluggish reaction to accommodation. Fundus: right media was clear; disk pale, reniform, axis at 90, lamina not visible and cupping shallow, excessive heaping of pigment along nasal border and moderate pigmentation at the lower temporal side; the general outline was well defined; the retinal vessels presented a healthy, normal appearance. Left eye a general haze of lens, vitreous clear; disk slightly oval at 90, outline well defined with a moderate pigment border, color pale, lamina not visible, cupping shallow. Vessels appeared healthy. The general fundus picture of each eye, with the exception of the atrophic color of the disk, was normal.

Visual Fields: The first field was mapped April 4 and repeated testing disclosed a well-defined nasal defect. At the end of the second week the patient was accepted as a house case of another institution and remained there for nine weeks. He returned to our observation June 27, with a vision equal to hand movements in the right eye, left eye 2/60. Candle

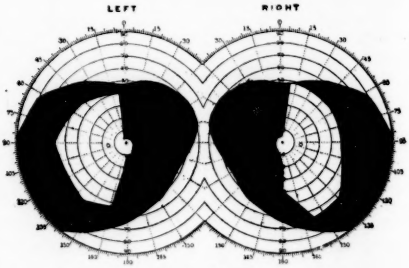


Chart 2.—Perimetric candle field, Aug. 5, 1912.

fields at this time showed a clear-cut binasal defect. Both optic papillae presented a decided atrophic pallor.

Neurologic Examination.—The gait was normal; Romberg's sign was present, but not very marked. There was no involvement of the cranial nerves other than the optic. Grip with both hands was strong; there was no ataxia of the upper extremities. Biernacki's sign was present. There were no muscular abnormalities, no trophic changes or sphincter disturbance. General sensibility was normal, with no astereognosis. Knee-jerks were normal; the Achilles tendon reflex was lost, both sides. There were no Babinski sign or ankle-clonus, no girdle sensation, lightning pains, visceral crises or loss of sexual power. Hysterical stigmata were absent.

Examination of the cerebrospinal fluid by Dr. E. D. Funk showed a lymphocytosis.

A Wassermann test, made by Dr. George F. Lull, was negative, which in all probability was due to the patient having been under mercurial treatment before the test was made. Since being under our observation the patient has taken potassium iodid freely, and had eighteen inunctions of mercurial ointment (1 dram each) before having the slightest tenderness of the gums, so that the therapeutic test may be said to have been positive. The urinary findings were negative.

A neurologic diagnosis of tabes was made. We consider this warranted by the combination of optic atrophy, slight Romberg sign, Biernacki's sign, loss of the Achilles tendon reflex, and a lymphocytosis of the cerebrospinal fluid.

The binasal defect in the visual fields we believe to be the result of a selective atrophy affecting the intracranial portion of the optic nerves.

1700 Walnut Street.

CASE OF STRANGULATED TUBO-OVARIAN HERNIA IN AN INFANT *

ARTHUR B. EUSTACE, M.D., AND R. WILLIAM McNEALY, M.D., CHICAGO

In a contribution of recent date Heineck[1] presented an analytic review of all undoubted cases of tubo-ovarian hernia reported in the French, German and English medical literature from 1890 to 1910, inclusive.

He cited eighty cases of hernia of this type, in which thirty-five occurred in infants under 1 year of age. The large majority of those hernias occurring in infants were irreducible and showed evidence of strangulation at operation. There were only two fatalities reported from these thirty-five cases, although in four no end-results were given.

All hernias of this type occurring in children were in the inguinal region and femoral hernias in adults only, with special reference to this condition.

History.—A colored infant, aged 6 months, brought to our clinic Wednesday morning, had always been in perfect health except for hernia. The infant was breast-fed. The Sunday night previous the mother noticed that the "rupture" (which she had noticed soon after the child was born) had come down again following or during a severe crying-spell. She attempted to reduce it as she had been in the habit of doing many times before, but found that she was unable to do so.

The following day the child became noticeably restless and was constantly fretful and was taken to the family physician, who told the mother to apply hot applications to the tumor mass and return on the following day.

On Tuesday the external swelling had noticeably increased in size and showed evidence of inflammation, whereupon the mother took the child to another physician, who gave the child some "drops" and advised more hot applications to the swelling. During the night the child vomited twice and had a scant bowel movement.

Examination.—The infant, which appears well nourished and quite active, does not seem to be in any great distress. The abdomen is slightly distended. The right labium majus is swollen, red and very tender, pits on pressure and has a translucent appearance. The tumor mass is about the size of an English walnut. It is impossible to elicit either fluctation or pulsation. There is no evidence of vaginal discharge. The temperature is 103.4 F.

After a compilation of the data a diagnosis of strangulated inguinal hernia was made and immediate operation advised.

Operation.—The infant was given a preliminary colonic flushing. Under ether anesthesia a regular right inguinal incision was made, the inguinal canal exposed and the hernial sac delivered into the field of operation. The peritoneum was of a dark-brown chocolate color and the small vessels appeared to be thrombosed. The sac was opened and about 2 drams of bloody fluid escaped, exposing a black congested mass which was not immediately recognized. With gentle traction this mass was drawn down into the inguinal canal, whereupon it was found to be a tube, ovary and broad ligament. The right cornu of the uterus could easily be brought into the canal and the tubal attachment demonstrated. There was a torsion of the tube and ovary in a clockwise direction of about 180 degrees. The tube and ovary were immediately resected and the stump returned to the abdomen. The peritoneal sac was freed about the hernial ring, transfixed and ligated. The Andrews imbrication method was used to close the parietes. The skin was closed with running silkworm-gut and no drainage used. Gutta-percha and adhesive protection of wound was employed.

* From their surgical clinic at the Post-Graduate Hospital, Chicago.

1 Surg., Gynec. and Obst., xv, No. 1, p. 63.

The child was put to the breast twelve hours after the operation. She remained in the hospital for twelve days.

Pathologic Report.—Examination of a specimen of the tube and ovary revealed that the tube was edematous and showed necrotic areas. The blood-vessels were thrombosed and there was extravasated blood in the lumen. The ovary was gangrenous.

The excellent prognosis in these cases stands out in contradistinction to strangulations in which the intestines are involved.

4238 Indiana Avenue.—4254 Indiana Avenue.

GONORRHEAL INVOLVEMENT OF THE SKIN OF THE PREPUCE CURED BY UNUSUAL THERAPEUSIS *

M. ZIGLER, M.D., NEW YORK

Instructor in Genito-Urinary and Venereal Diseases in the Post-Graduate Medical School and Hospital, Chief of Clinic in Genito-Urinary Lebanon Hospital, Assistant Dermatologist Lebanon Hospital, Out-Patient Department

As most authorities assert such an involvement rarely if ever occurs, I report this case of a low-grade inflammation of the skin of the prepuce, due to gonorrhea.

History.—Wm. S., aged 20, contracted gonorrhea three years ago. Three weeks after the first attack he noticed an area of redness on the under surface of the prepuce and that on pressure pus exuded from several points. Numerous antiseptic solutions were used to heal this lesion with negative result. Escharotics were tried without success. After several unsuccessful attempts to induce the inflammatory process to heal by other means, the surgeon in charge laid it open by a longitudinal incision through its entire length. Two months after operation the affected area was slightly improved; that is, it was still red and inflamed but there was no oozing of pus and only an occasional watery (serous) discharge, which continued until about one month before he came under my observation, when it had again become purulent. The patient says that "on pressure drops of pus can be expressed from several points in the inflamed area."

Physical Examination.—In April, 1913, examination of the patient showed a long prepuce on the anterior surface of which, one-half inch from the tip, extending in the long axis of the penis, was a linear lesion about 1 inch in length, and a quarter of an inch in width, somewhat raised above the level of the surrounding skin, reddish and which felt like a cord or a thread under the skin. Yellowish-white pus could be expressed from three distinct points, one of which was at the tip near the distal end of the penis, the second in the middle of the lesion, and the third at the proximal end. When probed the points were found to be superficial.

The pus was examined microscopically by Dr. R. M. Taylor of the pathologic department of the Post Graduate Medical School (N. Y.). He reported it as composed of polynuclear leukocytes, a considerable number of which contained Gram-negative cocci, typical of the gonococci in their morphologic characteristics and arrangement within the cell.

Culture Growths.—Plates on rabbit-blood agar and ascitic-fluid agar, showed, after twenty-four-hour incubation, numerous small grayish-white colonies which on microscopic examination proved to be Gram-negative cocci. Transfers from these colonies on ascitic agar grew with the characteristic appearance of the gonococcus. Therefore microscopically and culturally the organism was assumed to be a gonococcus.

Complement-Fixation Test.—The organism was subsequently identified as the gonococcus by the complement-fixation test.

Treatment and Course.—After the receipt of the pathologic report, I used a strong antiseptic wash of full strength hydrogen peroxid locally and later mercuric chlorid solution 1:1,000 for several weeks, but the lesion failed to heal. I then decided to circumcise, but on careful examination of the lesion I found that it extended backward beyond the corona and was therefore afraid that so much of the prepuce would have to be removed that later a curvature of the penis might occur during erection. I therefore decided on a more conservative plastic operation.

Operation and Result.—April 25, 1913, I excised an oval piece of the skin of the prepuce about 1 inch long extending from one-third of an inch from the tip of the prepuce to one-third of an inch back of the corona. The edges of the wound were brought together by four silkworm sutures. The wound healed by primary union in one week. When the patient was seen for the last time Sept. 7, 1913, no vestige of the lesion could be seen.

Pathologic Examination.—The excised tissue was examined by Dr. R. M. Taylor, who made the following report:

The specimen is an oval-shaped elongated piece of skin slightly flattened on one side. About 4 mm. from one end is seen an opening through the skin surface which leads into a sinus that can be followed through the middle of the tissue and ends blindly. The microscopic picture shows a sinus surrounded immediately beneath its epithelial layer by a mild acute exudative inflammation extending deeply into the subepithelial tissue where it is limited by a band of productive inflammation, as shown by the presence of young granulation tissue. Careful search for organisms (gonococci) by means of special strains was negative in result. This case is reported because of the rarity of occurrence of cutaneous gonorrhea and the unusual therapeutic procedure.

1097 Forest Avenue.

* Reported at the Bronx Medical Society, September, 1913, at the Lebanon Alumni Society, May, 1913.

IDIOSYNCRASY TO ASPIRIN (ACETYLSALICYLIC ACID)

EDWARD N. REED, M.D., CLIFTON, ARIZ.

The patient, Mr. T. W. T., American, aged 36, clerk in a store, had the diseases of childhood and had typhoid at the age of 19; otherwise he has never had any serious sickness.

January 29, at 7 p. m., he took one capsule containing 5 grains of aspirin, for a "cold." In about half an hour after taking the capsule he vomited, and in another fifteen minutes, he says, "his throat felt stiff and dragged when he swallowed, and he thought he was developing tonsillitis." In an hour and a half after taking the capsule he had reached the serious condition in which I found him at 9:30, two and a half hours after taking the medicine. At that time the face was cyanotic, the lips and ears violaceous in color, the eyelids so edematous as to be swollen almost shut, and conjunctivae much injected. The whole face was swollen. The breathing was extremely labored, like asthmatic breathing. The nasal mucous membrane was so engorged that breathing through the nose was impossible. The patient had vomited several times. Inspections of the mouth showed the bucal mucus membrane, fauces and pharynx dark red and swollen. The uvula was swollen to twice its normal size. The rest of the body was normal in appearance.

The pulse was 120, soft and full, the temperature 98. Auscultation of the heart was negative. In the lungs were numerous dry whistling râles, but no moist ones. The breathing was such as one would expect with an edema of the glottis. The urine was negative.

No treatment was instituted. In about six hours the patient was comfortable, the nose patulous and the breathing normal. The following morning there was a fine discrete papular rash on the trunk.

The patient reports that he had a "cold" about a year ago, for which he took one capsule, given him by a druggist (which I have ascertained to have contained aspirin and acetphenetidin, of each 2½ grains), and that a condition similar to the one here reported resulted, lasting about five hours.

Meaning of Public Health.—An individual cannot live economically, socially, mentally or morally unless he has health. Neither can a nation. Until people can be made to see this viewpoint, public health will mean nothing more than a placard and a bottle of formaldehyd.—William DeKleine in *Public Health* (Mich.).

New Instruments and Suggestions

A NEW SIGN IN PNEUMOTHORAX, PARTICULARLY ARTIFICIAL PNEUMOTHORAX

J. L. POMEROY, M.D., MONROVIA, CAL.

PRELIMINARY REPORT

In a careful study of over eleven cases of both spontaneous and artificial pneumothorax in pulmonary tuberculosis I have observed in every patient a condition of spasticity or rigidity of the rectus and abdominal muscles in the upper quadrant of the abdomen on the same side as the lesion. This "sign," as I so designate it, has been constant in every case. I have repeatedly pointed it out and had it verified by my associates. In my most recent case, a physician, on whom I performed artificial pneumothorax for persistent hemoptysis, the spastic condition of the left rectus (upper segment) and region of the epigastrium was so marked as to make a visible tumor. The patient noticed this himself and was much interested, as it seemed to vary in tenseness with the tension in the chest. This area is also hyperesthetic.

On account of the increasing amount of work done on artificial pneumothorax as a method of treatment for pulmonary tuberculosis, I am anxious to have other observers watch for this sign, so that it may be established or rejected as soon as possible. Reflex spasm of the abdominal muscles from lesions in the pleura, pericardium and other thoracic viscera is a well-established fact. To my knowledge its observance as a sign of pneumothorax is for the first time described. It has only recently been shown by Capps that the outer rim of the diaphragm and the parietal pleura are supplied by the lower intercostal nerves, and these also supply the skin and muscles over the abdomen. The patients on whom these observations were made were free from acute pleurisy, pericarditis and abdominal inflammatory conditions, as necropsy in two of the cases showed.

I trust that this sign, if verified, will prove a valuable guide in the production of an artificial pneumothorax. So far, this sign has persisted throughout the course of the condition, it was well marked, easily found and at times could actually be seen on inspection. I trust to publish in full a complete report giving details, and I hope that others will make similar studies.

CARE OF THE HEART IN PNEUMONIA

ROBERT FOSTER FENNELL, M.D., GUNTERSVILLE, ALA.

Since the care of the heart is of such vital import in the treatment of pneumonia, to recognize more clearly the conditions that modify the peculiar embarrassment under which it labors should be far more interesting to the clinician than the amount of lung-tissue involved in the process. This fact is of general but not universal knowledge among practitioners; and the point here to be brought out should not be a novel idea, but will go to show why the conditions surrounding the heart should be universally recognized and watched, rather than that an already overloaded heart should be strained and a very sick patient annoyed by too frequent examination of the lungs.

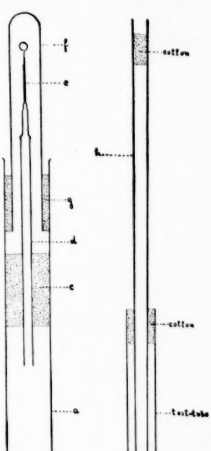
While we recognize the constant tendency to a decrease in the blood-pressure of the systemic circulation, we must not fail to consider the marked increase in the pressure of the pulmonic circulation and the additional work thus thrown on the right heart. When a heart is pumping against a mechanical obstruction of one or more solid lobes of the lung and is subjected to the action of toxins of a pneumonic infection, there is ever present a tendency to degeneration of the heart-muscle and subsequent dilatation. In the more severe types of the disease the fall of the systemic pressure may be so great as to make the radial pulse imperceptible, where the pressure may seem to have fallen below the point of heart's action; and still we have a hypernormal pulmonic pressure that is not only sufficient to furnish a stimulus for heart action but it may be so great as to cause dilatation of the right ventricle. The practical importance of a means to determine the pressure of the pulmonic circulation is a question. We are guided, however, by the aspect of the patient and by examination of the precardium as to the competency of the heart. Hence, the guide as to the immediate condition of a pneumonia patient is the quality of the pulmonic second sound of the heart, heard best in the second interspace just to the left of the sternum. So long as the sound of the pulmonary valves is accentuated and imparts a snapping quality we may rest assured that the right heart is doing its work well and the condition of the patient is good. If this quality is lost and cyanosis supervenes, the right heart is becoming incompetent to cope with the increased pulmonic pressure and dilatation is taking place.

In the presence of such a condition, would it be wise to administer strychnin or other vasoconstrictors and thus increase the load of an already overloaded heart? Would that not aggravate a condition we are trying to relieve? Would it not be better to give nothing? To relieve such a condition, it is necessary to reduce the pulmonic pressure (even if there is no radial pulse) and allow the heart an opportunity to reassert itself. To give the heart the greatest possible chance to recover, the patient should be placed in a semirecumbent position, which alone will decrease the work of the right heart and thus tend to equalize the pressure of the two circulations. Nitroglycerin, $\frac{1}{100}$ grain, should be given every two hours if necessary, and signs of edema of the lungs watched for. If this condition becomes apparent, the nitroglycerin should be discontinued, and $\frac{1}{100}$ grain of atropin given every two hours, with due caution after three doses. The whole body, except the head, should be enveloped in a mustard pack, and artificial heat applied. The patient should remain in the pack until the skin is red, and the pack repeated as often as necessary to retain redness.

A TUBE FOR COLLECTING BLOOD FOR CULTURES*

FRANK A. MCJUNKIN, M.D., BOSTON

To make a blood-culture carefully, not only is the inoculation of mediums in tubes and flasks usually required, but also the plating of the blood. As a result this part of the routine of a hospital laboratory is time-consuming and laborious, chiefly for the reason that much apparatus must be carried to the bedside, where the inoculations are always made under certain difficulties.



Tube for collecting blood for cultures.

With the idea of simplifying and improving the usual technic by making possible the plating of the blood and the inoculation of tubes and flasks in the laboratory, A. A. Epstein (*Am. Jour. Med. Sc.*, September, 1907) and C. Ryttenburg (*Jour. Med. Research*, 1906, N. S., xv, 79) have sufficiently tested an oxalate solution to show that it may be used to prevent the coagulation of blood without inhibiting the growth of any organisms which may be present. Their method has been to withdraw the blood with a syringe and force it out of the syringe into a tube which contains the ammonium oxalate solution. This tube is then carried to the laboratory, where the cultures are made.

In the collection of blood for Wassermann tests, in which perfect asepsis is not obligatory, a needle is inserted into the arm-vein and the blood run directly into a sterile tube. It is the ease and speed with which a large number of specimens of blood may be collected for this test that prompted the use of a tube with oxalate solution in it and a needle attached.

The preparation of the tube is simple. In a test-tube (*a*) which measures 25 by 200 mm. (Bausch and Lomb No. 16920) there are placed 15 c.c. of a solution which contains 2 gm. of

* From the Pathological Laboratory of the Boston City Hospital.

ammonium oxalate and 6 gm. of sodium chlorid to the liter of distilled water. This is marked *b* in the illustration. Cotton 4 cm. wide (*c*) is now wrapped around the rubber tubing (*d*), which is 150 mm. long with a 1-mm. wall and 3-mm. lumen, and into the upper end of this tubing there is inserted a 19-gage needle 1 inch long (*e*). The needle is capped by inserting into the upper end of the large tube a smaller one (*f*) which measures 12 by 100 mm. (Bausch and Lomb No. 16920) and has wrapped around the lower end a 3-cm. plug of cotton (*g*). Both cotton plugs should fit snugly. The tube complete is autoclaved for twenty minutes at 110 C.

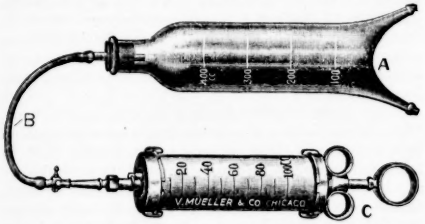
After the needle has been inserted into the vein, a few seconds are required for the blood to pass through the tubing. The lower cotton plug eliminates all chances of contamination, and when it is removed in the laboratory the upper end of the tube is flamed and the blood removed with a 10-c.c. sterile pipet (*h*). The tubing and needle are cleansed by forcing through them a few cubic centimeters of water from a syringe, after which they are placed in a saturated solution of borax.

RECENT EXPERIENCES WITH BLOOD TRANSFUSION *

VERNON C. DAVID, M.D., AND ARTHUR H. CURTIS, M.D., CHICAGO

Three years ago we published a preliminary report on the transfusion of blood by a new method (THE JOURNAL, Jan. 7, 1911, p. 35).

In a first experiment, given in detail in that report, a simple outfit was used consisting of a 100-c.c. lubricated ground-glass syringe and cannula. Blood was withdrawn from a slit made in a vein, the apparatus removed, the cannula inserted into another vein and the blood injected.



Apparatus for blood transfusion: Blood enters only the paraffin-coated bulb, *A*, the cannula tips of which fit into the veins of donor and recipient. The rubber tube, *B*, and syringe, *C*, are used to exert positive and negative pressure.

This technic is quite satisfactory for transfusion of a small amount of blood. The procedure was described with the idea that it might be used for infants and in other instances in which a moderate amount of blood is required. We also experimented with the use of citrate solution to keep the blood from clotting and decided that it is inadvisable and unnecessary.

Two years after the publication of our paper, Cooley and Vaughan (A Simple Method of Blood Transfusion, THE JOURNAL, Feb. 8, 1913, p. 435) described the preceding method as original with them. Their technic differs in two respects; a smaller syringe is employed and there is omission of the petrolatum coat, two features in which we believe their technic is inferior.

In recognition of the fact that considerable blood is usually needed, an entirely different apparatus was advised for routine transfusion. Essential features included the use of a coat of liquid petrolatum to prevent clotting, and the employment of a Y cannula to connect the veins of donor and recipient. A syringe attached to the stem of the Y hastened the flow of blood and served as a collecting-chamber before injection into the recipient.

In October, 1911, we published further notes on transfusion, at which time was described the apparatus now used (THE JOURNAL, Oct. 28, 1911, p. 1453). In response to inquiries, and to express our present views, it seems desirable once more to describe the technic and to give a survey of our experiences to date.

* From the Memorial Institute for Infectious Diseases; aided by a grant from the Fenger Memorial Fund.

The apparatus (see illustration) consists of a large glass bulb with two cannula tips. To assist the flow of blood a rubber tube and syringe provided with a two-way valve are attached to the bulb when needed. The glass bulb is sterilized by the dry method and the inner surface coated with paraffin. The paraffin coat is best applied by pouring about 50 c.c. of moderately warm melted paraffin into the cold bulb, which is then rotated to secure a uniform coat. The excess paraffin is then allowed to escape through the cannula tips. When the paraffin cools the tips are usually found to be occluded; they are slightly heated, gently shaken and rotated for a few seconds. The paraffin when once more solidified forms a satisfactorily uniform and delicate coat. The bulb thus prepared may be kept in sterile condition for many weeks, ready for instant use. Graduated bulbs of over 400-c.c. capacity have been found to be the most satisfactory; two should be in readiness, one with cannula tips about 3 mm. in diameter and one with tips of smaller size for transfusion of children and adults with unusually small veins.

TECHNIC OF OPERATION

Under local anesthesia with 1 per cent. novocain, a 1-inch incision is made over the most prominent vein of the elbow region of both donor and recipient. The donor's vein is then clamped at the distal end of the incision, stripped, ligated proximally and cut below the ligature. The recipient's vein is ligated distally, stripped, clamped at the upper end of the incision and cut just above the ligature. The open end of each vein is caught at three equidistant points with mosquito forceps and may be washed out with liquid petrolatum if desired. If a small vein is encountered it can be dilated gently with mosquito forceps. The cannula tips are moistened by dipping into liquid petrolatum, then inserted into the respective veins of donor and recipient and ligated in position.

Aided by the use of a shoulder constrictor, blood rapidly enters the bulb when the donor's vein is released. As the blood rises, a covering cap of liquid petrolatum is added to relieve surface tension. The rubber tube is now attached to the top of the glass bulb and the syringe is used to produce negative pressure. The bulb quickly fills. The donor's vein is then held with the fingers, the recipient's vein is released and the blood is introduced into the latter at any desired rate of flow. When the bulb is nearly empty the recipient's vein is held and that of the donor released, thus allowing the bulb to fill again with blood, after which the process is repeated as many times as is necessary.

Transfusion according to this method has been performed over fifty times on dogs with constantly satisfactory results. (The method recently described by Kimpton and Brown [THE JOURNAL, July 12, 1913, p. 117] is essentially a duplicate of ours, save that one cannula tip is done away with. This necessitates pulling the cannula out of the donor's vein and inserting it into the recipient every time the tube is filled, a maneuver which is unnecessary and which invites traumatism and clotting.) An amount sufficient almost to exsanguinate the donor has usually been transfused. To test the number of times the bulb might be refilled without difficulty, transfusion was made from the left to the right jugular vein of a dog; after nearly 4 quarts (3,600 c.c.) were transfused the apparatus continued to be in perfectly satisfactory working order.

We have now transfused a total of twenty-two human patients. Other methods were thoroughly tried, but the one here described has alone been satisfactory. In two instances success was incomplete. In our first case only 300 c.c. were obtained because of failure to use a constrictor around the arm of the donor. The second difficulty was encountered in the case of a delicate woman with unusually small cubital veins. The use of the child's-size cannula tips now obviates troubles of this nature.

Of cases not yet reported, the most striking result was obtained in a patient in the Presbyterian Hospital under the care of Dr. Clifford Grulee. A boy aged 3 acquired a rapidly progressive aplastic anemia and in three weeks' time presented a blood-picture with 2,600,000 red cells and 33 per cent. hemoglobin. Nov. 16, 1913, 475 c.c. of blood were transfused from the cubital vein of the father into the patient's external jugular vein. An abundance of blood was available, but when the child's pulse became bounding and his excessive pallor gave way to a cherry-red color the operation was discontinued. The red blood-cells numbered 4,300,000, hemoglobin 63 per cent. Red cells and hemoglobin fell moderately each day for several days, and then remained stationary for one day, after which began a rise which continued until recovery. In addition to conclusions stated in previous papers, we would

emphasize the value of transfusing large amounts of blood. As will be noted, in the case reported, a pint of blood was required to raise the hemoglobin of a 3-year-old child from 33 to 63 per cent. A profound anemia in an adult is not appreciably relieved with less than a quart of blood.

104 South Michigan Avenue.—7 West Madison Street.

A NEW CULTURE-MEDIUM FOR THE GONOCOCCUS

J. O. HIRSCHFELDER, M.D., SAN FRANCISCO

In order to satisfy the demand for the gonococcic extract described in THE JOURNAL, April 5, 1913, it was necessary to use large quantities of the micro-organism. It was found that it was impossible to grow them in sufficient numbers on the mediums ordinarily employed. By using the following culture-medium all difficulties were removed:

Two hundred gm. of bullock's testicle, ground with a sausage-grinder, were boiled with 1,000 c.c. of water made alkaline with sodium hydroxid so that 10 c.c. required 1 c.c. tenth-normal acid to neutralize to phenolphthalein. This was filtered, and 1 part of this testicular extract was added to 3 parts of agar prepared as follows:

	gm. or c.c.
Veal bouillon	1,000
Saturated solution of sodium phosphate made neutral to phenolphthalein with phosphoric acid	100
Agar	30

Agar so prepared can be autoclaved, and on it the gonococcus grows readily.

275 Post Street.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

TRYPSIN, Fairchild.—The proteolytic enzyme of the pancreas, separated to a considerable extent from the other enzymes and constituents of the gland and of a definite strength.

Actions and Uses.—Trypsin acts in a slightly alkaline medium on proteins and nucleoproteins, converting them into peptones and polypeptids, and carries the splitting so far as to partly break down these structures into the amino-acids. It acts best at a temperature of 40 C. Trypsin is largely destroyed in the stomach and there is very little reason to expect any action from it in the intestine when it is given by the mouth.

Trypsin is used for the partial digestion of food outside the body. A complete splitting into amino-acids is to be avoided.

Dosage.—Trypsin may be given in doses of 1 grain (equal to from 4 to 5 grains Pancreatin, U. S. P.) and upward, best in a capsule with some diluent, as milk-sugar, and if indicated, with sodium bicarbonate. It is locally applied in solution or after trituration of the trypsin with some appropriate diffusible powder.

Manufactured by Fairchild Brothers and Foster, New York. No U. S. patent or trademark.

Trypsin, Fairchild, is a fine dry powder, in which form the enzyme is permanent when protected from moisture. It is slowly but not completely soluble in water.

Trypsin, Fairchild, has from four to five times the strength of Pancreatin, U. S. P. The tryptic power of Fairchild's trypsin by the method proposed by Sir William Roberts is 10,000 units.

Therapeutics

SHOCK AFTER OPERATION

Physicians, surgeons, anesthetists and laboratory scientists are not agreed as to the best treatment for this condition, or whether there is any best treatment. Dr. S. T. Pope[1] of San Francisco has recently presented a paper describing his experimental study of shock in animals. The results of various treatments of shock induced in animals by bleeding are graphically demonstrated by blood-pressure tracings. The uselessness of many drugs used in shock is apparently proved from the experimental point of view.

The clinical objection to drawing positive conclusions from laboratory findings and applying such conclusions practically in the operating-room is that a patient suffering from shock has rarely lost much blood. Also, the patient has generally been subjected to the nervous strain of apprehension for some time before the operation is performed. There has also been a more or less prolonged abstinence from food, depending on the rule of procedure of the operator or the anesthetist. The method of producing anesthesia is also important; that is, whether or not preinjections of morphin, scopolamin or other alkaloids have been made, or whether or not Crile's method of preventing shock has been followed. The cause of shock in a person operated on is very different from that in an animal, which, by bleeding or other measures, is deliberately shocked. Consequently, successful treatment not only may be, but perhaps must be, different.

Many incontrovertible truths are offered by Dr. Pope. There is no question that when drugs are administered hypodermatically, it must take a considerable time in minutes (the length depending on the drug used) before any results can be expected in improved cardiac strength or blood-pressure. In the next place, it is not always justifiable to conclude that a drug administered hypodermatically has exactly the same action as when administered intravenously. The intensity of the intravenous action is very different from the slowly absorbed or possibly local (irritant?) action of a drug administered hypodermatically.

While camphor is shown by Pope to be of no value in shock when given to animals intravenously and to cause an actual fall in blood-pressure, when administered in the usual manner, subcutaneously, the circulation is certainly improved by its use, although, in discussion, he stated that this improvement may be only apparent, in that the amplitude of the pulse is increased, although the blood-pressure may not be. In any case, when a pulse is almost absent at the wrist and improves under the action of camphor subcutaneously, and the color returns to the patient's face, we must believe that the camphor has caused some improvement of the person in shock. Also, it is a fact that there is no after-depression following such camphor injections. The same improvement was often found when, a few years ago, brandy or whisky was administered subcutaneously, or when, as often in Germany in previous years, ether was so given. From reflex irritation, before much was absorbed, the circulation certainly improved. Later, after absorption, however, the depression increased. That is, the future of alcohol as a stimulant is bad,

1. Pope, S. T.: California State Jour. Med., December, 1913, p. 409.

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while the future of camphor in ordinary dosage is apparently good.

Pope shows what the profession should learn more rapidly, that, in serious conditions, strychnin does not raise the blood-pressure, and may do harm to a worn-out, fluttering, rapid heart. On the other hand, in prolonged shock, when the nerve-centers appear to be sluggish, the impulses apparently lack tone, and the patient seems to be slowly dying with cerebral and nervous apathy, strychnin is certainly valuable, in not too large doses.

The sudden dilatation caused by nitroglycerin seems pharmacologically entirely incorrect in shock. The increase in peripheral circulation which it causes can better be secured by the use of dry heat and perhaps general massage or friction.

Pope does not mention atropin. This alkaloid is very slow in its action, but it is a respiratory and cardiac stimulant and generally improves the arterial pressure. Therefore, whatever immediate treatment of a patient is used, a sufficient dose of atropin may well be given hypodermatically to act in a few hours, if other measures save the patient from immediate death.

Some physicians have occasionally employed cocain in shock. Because of its pharmacologic activities, its use appears inexcusable.

Digitalis in any form does not seem indicated in shock, but strophanthin, given intravenously, has been repeatedly shown (and again by Pope) to cause an improved heart-action and increased blood-pressure. This drug does not act so well when given subcutaneously or intramuscularly.

As we would expect, injection of epinephrin is shown by Pope to cause an enormous rise in blood-pressure. He does not tell us how long this rise was sustained, but its action has been found so evanescent that few clinicians or surgeons now rely on it. To be of value, a minute dose must be constantly administered, intravenously, in physiologic saline or in Ringer's solution. At times it has seemed that subcutaneous injections of epinephrin solution were valuable for more or less continuous improvement, this probably because such local contraction is caused that but a little is absorbed at a time; so that such an injection may give continuous epinephrin treatment for some time. On the other hand, there is danger of abscesses from such disturbance of the tissue as epinephrin can cause.

Pope did not experiment with the pituitary blood-pressure-raising agent, but such extracts seem to be more valuable than epinephrin in conditions of shock. The blood-pressure rise is not so great, but is more prolonged, and the action on the medullary centers is more satisfactory, as epinephrin may cause respiratory depression. Also, pituitary extracts are more or less diuretic.

Caffein, given intravenously, is shown by Pope not to raise the blood-pressure, but apparently even to lower it. It is a question whether caffein, given by mouth or rectum or hypodermatically, would ever reduce the blood-pressure, even if it did not raise it immediately. There can be no disputing the fact that caffein can cause a great deal of irritability, palpitation and weakening of the force of the heart. Also, some patients show a very disturbing idiosyncrasy to caffein. Generally, however, in depressed circulatory conditions, as in mild shock or when disturbed circulation occurs in serious illness, caffein is one of the best circulatory stimulants that we possess.

Pope well urges that when rapid breathing has occurred prior to or during an operation, and the patient is in a condition of acapnia, and the blood-pressure has fallen from loss of carbon dioxid, as well demonstrated by Henderson, the patient really is suffering also from oxygen starvation. Such a patient needs oxygen, perhaps administered mixed with carbon dioxid; but artificial respiration, or respiration by means of a pulmotor, or the administration of small doses of oxygen (not to hyperoxygenate the patient), or the administration of oxygen mixed with carbon dioxid, are positively essential.

Pope urges that with the respiration and circulation improving through the oxygen inhalations, the carbon dioxid will again be formed in the tissues and the patient will develop the carbon dioxid stimulation of the blood-vessels and the respiratory center. In this way he interprets Henderson's findings for practical application in the operating-room. He does not speak of inverting the patient and thus increasing the blood-pressure at the base of the brain. Such simple physical therapy should never be forgotten.

On the other hand, a prolonged Trendelenburg position can cause disturbed heart-action, or even a heart-block, Pope says, "due either to acute dilatation, to toxins, or fatigue, or sepsis, or coronary clots, or direct trauma to some area of cardiac reflex." It is quite possible, however, that from this position slight edema or exudate into the fourth ventricle may occur and may disturb the respiratory and pneumogastric centers. In shock from this cause, Pope suggests venesection from the jugular vein, cardiac massage and epinephrin in Ringer's solution forced backward in the arterial stream, as giving the only possible chance for recovery.

If respiration is stopped from obstruction, an entirely different condition arises. All that is needed, when this occurs, is to lift the jaw, pull forward the tongue, clean out the mouth and larynx, and use artificial respiration or a pulmotor.

A good immediate treatment of shock, until a better is offered, would be to start artificial respiration or respiration by means of the pulmotor at once; to raise the feet and legs if the patient has not been in a Trendelenburg position; to give one or more hypodermics of camphor (with all due respect to the objection of Dr. Pope); to administer atropin sulphate $^1/_{100}$ grain for its future action (provided atropin in some form has not already been administered as a prelude to the anesthesia); to give strophanthus intravenously if deemed advisable; or to give a hypodermatic injection of pituitary extract, unless it shall be shown to be of no great value. The patient should be surrounded with hot-water bags; friction of the extremities is advantageous; coffee may be administered by rectum, unless it is considered of advantage to give caffein hypodermatically, this also for its future action if the patient quickly improves from the activities of the more immediately acting drugs.

Simple Treatment for Ringworm.—C. Hughes Foley in the *Lancet*, Jan. 24, 1914, describes his method of treating ringworm which is as follows: The diseased area is first washed with strong solution of sodium bicarbonate and swabbed with spirit of ether to remove grease. It is then painted with tincture of iodin and sprayed immediately with ethyl chlorid until the integument gets china white. The deeper the disease process the longer the spray must be applied. In ringworm of the scalp three or four applications may be necessary, but on smooth surfaces one application usually suffices.

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SATURDAY, MARCH 7, 1914

THE SUPRARENALS AND VASOMOTOR TONUS

The discovery of the blood-pressure-raising potency of extracts of the suprarenal glands and the final isolation of epinephrin as the active substance involved therein has served for some time to direct attention anew to the possible function of the organs which produce it. For half a century before this the correlation of the suprarenals with Addison's disease and the experimental demonstration of their indispensability for life made by Brown-Séquard and others, had awakened some interest in the question as to how these glands serve the organism. But the study of their real physiologic significance unquestionably received a new impetus from the classic investigations of Oliver and Schäfer. Since their memorable communication in the spring of 1894, the vasomotor properties of the suprarenal glands have been continually studied by the scientific world. Later, beginning with the observations of the remarkable effect of the suprarenal substance on the sympathetic nervous system, Langley and Elliott showed that epinephrin injected into the circulation arouses every activity which can be normally excited by stimulation of the sympathetic system. A list of the responses elicited by the active principle of the suprarenal bodies is to-day regarded as essentially identical with a list of the chief functions of the sympathetic nervous system. Glycosuria is likewise among the symptoms which can be induced by administration of epinephrin.

In view of all these phenomena the suprarenal bodies are clearly entitled to be regarded as the source of an important internal secretion. In the blood issuing from them, evidences of the presence of some epinephrin can be obtained. A recent text-book by a prominent physiologist[1] states accordingly that we must without much doubt ascribe to the medulla of the suprarenal capsules, as well as to the other chromaffin tissue in the body, the function of maintaining the normal constriction of the arterioles and of facilitating in some way or other the functions of the sympathetic nervous system generally. This statement indicates the direction of present-day emphasis.

1. Starling, E. H.: Principles of Human Physiology, 1912, p. 1325.

Experimentally, epinephrin has proved to be endowed with properties that would make it serve as a typical hormone. It is a substance of comparatively low molecular weight, easily diffusible, having a drug-like excitatory action on specific tissues of the body, and being rapidly destroyed after having discharged its office. Shall we therefore assume that it acts as a continually renewed stimulus serving to maintain the tonicity of the blood-vessels? This is evidently a widely current belief. Hoskins and McClure[2] have furnished a definite reply. They maintain that the actual quantities of epinephrin present at any moment even in the veins issuing from the suprarenal bodies, in which the concentration must be higher than elsewhere in the organism, is decidedly too small to maintain any pressor effect. If this be true, then admittedly the normal tonus of the blood-vessels cannot be ascribed to the perfusion with epinephrin. The conclusion that vasoconstrictor and supposedly other sympathetic fibers are not under a tonic influence exerted by the suprarenals is fortified by the failure to observe prompt fall of pressure due to loss of vasomotor tone when the influence of the glands is excluded for a time by ligation.[3]

Evidence of another sort leads in precisely the same direction. Trendelenburg[4] has compared the blood-pressure before and after complete extirpation of the suprarenal bodies. By excluding the modifying effects of narcosis, operative interference, etc., through the application of new experimental methods, he has been able to observe a constancy of blood-pressure independent of the supposedly necessary presence of the glands. It must not be erroneously inferred from this that they are not essential to life, for animals deprived of them invariably die. It is merely contended that their removal does not so promptly lower blood-pressure as one would expect if the tonus of the vessels were entirely dependent on a continuous stimulation by fresh supplies of the evanescent internal secretion of the suprarenals. This statement leaves the possible contributory function of other chromaffin tissues untouched.

If it has thus become questionable, to say the least, that the vasomotor, and perhaps the entire sympathetic apparatus is kept in tonic activity by a persistent minimal suprarenal discharge, it seems fairly well demonstrated that during times of special stress the suprarenal secretion is increased, whereby the influence of the sympathetic nervous system is augmented or reinforced. Through some mechanism like the latter there may be a marked increase in muscular efficiency. Suprarenal extirpation always finally results in circulatory failure. The facts, however, that circulating epinephrin is quickly destroyed, whereas the weakness following the removal of the glands develops hours or days afterward, and that

2. Hoskins, R. G., and McClure, C. W.: The Adrenal Glands and Blood-Pressure, Arch. Int. Med., October, 1912, p. 343.

3. Compare Hoskins, R. G., and McClure, C. W.: The Relation of the Adrenal Gland to Blood-Pressure, Am. Jour. Physiol., 1912, xxx, 192.

4. Trendelenburg, W.: Ueber die Beziehungen der Nebennieren zur normalen Blutdruckhöhe, Ztschr. f. Biol., 1914, lxiii, 155.

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the asthenia is shared by skeletal muscle which has no sympathetic innervation, indicate, as Hoskins and McClure suggest, that epinephrin effect is due rather to an interference with the nutritional processes in the tissue. Now that some of the unjustified deductions of recent years have been discarded, it may become profitable to devote more attention to the metabolic and other aspects of suprarenal function.

POPULAR BELIEFS AND SCIENTIFIC FACTS

Popular beliefs on scientific subjects apparently run in waves. Many of our readers remember the interest in hypnotism which followed the publication of "Trilby." Svengali with his "hypnotic eye" at once became a real and possible personage in the public imagination. The newspapers were full of stories of girls and women who had suddenly been fixed and paralyzed by the hypnotic gaze of some mysterious stranger with piercing black eyes and who had been compelled by his will to fantastic acts which they were powerless to prevent. Fiction writers took up the idea, and stories centering around hypnotic influence became common. It was used as a plea in criminal cases, various culprits alleging that they had been hypnotized and compelled against their will to perform unlawful acts. All this occurred in spite of the fact, frequently stated and known by every scientific man, that the limitations of hypnotism are definite and well recognized, that no person can be hypnotized unknowingly or against his will, and that few persons are so susceptible as to be capable of being compelled to perform acts beyond their own volition and knowledge.

Another popular fiction which later on took the place of hypnotism was that of instantaneous anesthesia. Stories appeared in the newspapers of women who had been accosted by strangers and, under some pretext, had permitted a cloth or a handkerchief to be pressed momentarily over their mouth and nose. Immediate unconsciousness was said to have followed, resulting in a period of insensibility and irresponsibility, varying from a few minutes to hours or even days. Chloroform sprayed into an open window by means of an atomizer, anesthetics tied to a rag on the end of a pole and thrown into a bedroom, instant unconsciousness following the administration of drugs unknown to physicians and pharmacists, were some of the variations of this idea. In the minds of physicians and nurses who see every day the administration of anesthetics, such stories only excite mirth. Any one who knows the difficulty and labor of securing unconsciousness through the use of anesthetics, even under the most favorable conditions and with every possible means of restraining and controlling the patient, knows how absurd such stories are.

A latter-day variation of these popular beliefs may be found in the "poisoned needle" stories which have been going the rounds of the press recently. A woman goes to a moving-picture theater, enters a crowded elevator, a street-car, or elevated train, or is caught in the press of a crowd. Suddenly she sees, close beside her, our old friend the "mysterious stranger," with the piercing black eyes and the compelling manner. At the same time, she feels a sting and knows that she has been stabbed with a poisoned needle. She immediately becomes unconscious, dazed or irresponsible for a greater or less period of time, during which she experiences a number of marvelous adventures or hairbreadth escapes.

It is not possible to say that no woman was ever without her knowledge given a drug hypodermically which produced unconsciousness. It can, however, be said very positively that there is no drug known to scientific men which could be administered in the manner or which would produce the effect described in recent newspaper reports.

One of the laws of hysteria is that when any peculiar phenomenon is reported, similar instances immediately appear throughout the country. We may now expect a spring crop of magazine stories and popular novels based on the poisoned needle as a motive. Scientifically, the thing is as ridiculous and impossible as hypnotism of an unwilling subject or instantaneous anesthesia. Popular beliefs travel in waves, and hysteric and excited imaginations help them along. The history of popular delusions, from Salem witchcraft to present-day vagaries, is full of such instances.

ATMOSPHERIC TEMPERATURE AND PNEUMONIC PLAGUE

Why plague of the bubonic type should prevail in epidemic form over such long periods of time, whereas plague pneumonia has for the most part been confined to numerous scattered cases, has been one of the mysteries of epidemiology. That pneumonic plague can assume epidemic proportions under certain circumstances was, however, demonstrated most conclusively in Manchuria during the winter of 1910-1911 by one of the most virulent epidemics of modern times. Epidemiologists are at present probably all agreed that air infection plays no part in the spread of bubonic plague. As Chapin[1] pointed out in THE JOURNAL in an excellent review of the subject of air infection, a fine example of the modern scientific method is found in the development and demonstration of the theory that plague is primarily a disease of rodents, and that it is spread to man almost exclusively through the agency of fleas. In accord with this, bubonic plague may be treated in general hospitals without danger, if only the place is kept free from vermin. In the case of pneumonic plague, on the other hand, the disease is usually highly con-

1. Chapin, C. V.: The Air as a Vehicle of Infection, THE JOURNAL A. M. A., Feb. 7, 1914, p. 423.

tagious. It is now believed that the disease is easily air-borne, presumably by droplets; and the studies of Strong and Teague[2] in Manchuria have done much to substantiate this theory.

Teague and Barber[3] have offered an explanation of the rapid spread of pneumonic plague in Manchuria and its failure to spread in India. It seemed probable to them that the plague bacilli contained in fine droplets of pneumonic-plague sputum would suffer death from drying in a few minutes unless they were suspended in an atmosphere with extremely small water deficit. Such an atmosphere is, under ordinary circumstances, of common occurrence in very cold climates, whereas it is extremely rare in warm ones. Hence, since the droplets of sputum persist longer in the cold atmosphere, the plague bacilli remain alive longer in the air, and there is a greater tendency for the disease to spread in cold climates than in warm ones.

It is in accord with such a hypothesis that during the Manchurian epidemic the temperature at Harbin (where the great majority of deaths occurred) ranged between — 9 and — 32 C. (from 15.8 to — 25.6 F.). The disease is spread indoors, however; so that it has remained to ascertain whether the temperatures of inns and lodging houses in Harbin in which plague patients were actually found would lend support to the general contention. Recent statistics gathered by Teague[4] leave no doubt that the native inns and similar buildings are very inadequately heated in winter. Several of them showed temperatures of 6 C. (41 F.) or less, and records of 10 C. (50 F.) were quite common. Teague has further learned of a small epidemic of pneumonic plague occurring in southern Brazil during the cool season at a place where the houses are not artificially heated. Such facts favor the opinion that atmospheric temperature is an important factor in determining the spread or failure to spread of pneumonic plague.

SOME EXTREMES IN NUTRITION

Amid all the active discussion current at present regarding the protein requirement of healthy man it is interesting to compare the extreme values which come to light in different parts of the world, either as the result of experiment or the record of habits. Nothing can more effectively warn against the unwisdom of dogmatic statements about this aspect of our dietary needs than the recital of two entirely unlike experiences which have lately been published. The Danish physiologists August and Marie Krogh[5] organized an expedition not long ago to investigate the dietary habits and metabolism of the Eskimos at the island of Disco in Western Greenland. It was observed that the normal ration of these people contains enormous quantities of protein and fat, whereas the intake of carbohydrate is very small. Half of the latter type of foodstuff is taken in the form of the glycogen present in the meat consumed. The eating-habits of the Eskimo approach those of carnivorous animals to the extent that the periods at which the diet is eaten are irregular and somewhat infrequent, the meal under these circumstances occasionally being extended to the utmost capacity of the stomach. Despite this we are told that no nutritive disorders are apparent aside from incidental furunculosis and frequent nose-bleeding in the periods of overliberal food ingestion. The physical endurance of Eskimos nourished in this way is conspicuous, as is their resistance to the rigors of the climate. Diseases involving uric acid are extremely rare. The highest food consumption actually measured by the Kroghs was 1,804 gm. (nearly 4 pounds) of boiled meat in one day, corresponding to 85 gm. of nitrogen and 218 gm. of fat. This is said to be far below a record figure, however. The utilization of these large portions of meat is satisfactory, the loss of nitrogen in the feces rarely exceeding from 3 to 5 gm. per day. A urinary output of nitrogen amounting to 53 gm. per day was actually determined. When the extremes of meat ingestion occur, the dependence of the output of urea on the volume of the kidney secretion is clearly manifested.

The other extreme of protein possibilities is exemplified in the latest studies of Hindhede[6] in Copenhagen. His interesting subject was able to maintain himself in excellent nutritive equilibrium and muscular efficiency through long periods of months, not merely days, on a diet essentially composed of potatoes and margarin. The necessary intake of potato was extremely large, amounting to 2 kg. (4 pounds), which we fancy few persons could manage to consume day after day. On this diet it was actually possible to maintain nitrogen equilibrium with an intake of nitrogenous matter amounting to only 3.62 gm. of digestible nitrogen a day, and with a total daily intake of 3,900 calories. When hard work had to be performed it was necessary to increase the potato fraction of the regimen to no less than 4 kg. (8 pounds) or more per day, together with liberal additions of fat, so as to bring the entire energy content up to about 5,000 calories with only 10 gm. of digestible nitrogen. It is interesting to note that no dilatation of the stomach resulted even from these monster meals.

Again, Dr. Folena[7] of the Hygiene Institute in Pisa has succeeded in his own case in effecting nitrogen balance on the minimum intake of 33 to 39 gm. of nitrogenous substance, a quota of about 0.6 gm. per kg. of body-weight per day. The protein requirement to induce

2. American Medical Men in Dangerous Posts, editorial, THE JOURNAL A. M. A., Jan. 11, 1913, p. 130.
3. Teague and Barber: Philippine Jour. Sc., B., Tropical Med., 1912, vii, 172.
4. Teague, O.: A Further Note on the Influence of Atmospheric Temperature on the Spread of Pneumonic Plague, Philippine Jour. Sc., B., Tropical Med., 1913, viii, 241.
5. Krogh, A., and M.: A Study of the Diet and Metabolism of Eskimos, Copenhagen, Bianco Luno, 1913.
6. Hindhede, M.: Studien ber Eiweissminimum, Skandin. Arch. f. Physiol., 1913, xxx, 97.
7. Folena, V.: Esperienze sul minimo di azoto nella razione alimentare normale in regime di riposo e di lavoro, Ann. d'ig. sper., 1913, xxii, 297.

nitrogenous equilibrium was not profoundly increased by hard work. Obviously these minimal figures must not be applied to the requirements obtaining under conditions of growth or repair. The figures of Folena are somewhat lower than those recorded in the widely known investigations of Chittenden[4] on the protein minimum.

In the face of the extremes here reviewed one may well inquire whether many of the rigid rules and dietary dicta of physicians who adhere to "systems of diet" have a justification in fact. Obviously the adaptability of the human body to wide ranges of food possibilities is not inconsiderable. It is, of course, eminently desirable to learn the limits which the nutritive practices cannot overstep with physiologic safety. When once these are established, however, there is usually left free play for the application of common sense, culinary judgment, and individual preference in times of health and disease alike. The successful dietitian will utilize these factors in the practical application of the modern lessons of the science of nutrition.

THE EXPENSIVE SANDWICH

The wide-spread interest in scientific circles as well as in the ranks of social workers concerning some of the problems of nutrition among the masses is exemplified by current discussions regarding school lunches, institutional dietaries, economical menus for the household, and the cost of living. These are constantly bringing out the fact that diet customs are subject to wide inequalities in character in different parts of the world and in different strata of society; and they further make it clear that food habits are not so fixed as was once supposed, but are varied to meet economic changes and alterations incident to the shifting of population. Rubner has remarked that the scene of the changes witnessed in the nutrition of the masses lies in the cities, the country districts representing the conservative factor and adhering more closely to the dictates of tradition.[5] It is in the cities that the most noticeable of the modern changes in dietary customs, such as the increasing consumption of meat and the introduction of ready-to-eat foods, have first taken hold on greater numbers of individuals. Furthermore, the questions of diet in large institutions almost always need to be solved with reference to the local market conditions.

Max Rubner, the eminent physiologist and hygienist of Berlin, has lately presented some interesting data on one of the many transformations in dietary custom which is peculiarly conspicuous in the cities of Germany.[6] It is the rapidly growing tendency to introduce widely what corresponds in general to the American sandwich (*das belegte Brot*) into the daily food-intake. Anyone who observes carefully the eating habits of working men in this country and who has followed the enormous increase in the lunch-counter scheme of dietetics among our own population must admit that the sandwich is something more than a trivial incident in the nutrition of those who live in populous districts. Physiologically, it involves the supplementing of bread — the common "staff of life"— with considerable fat (butter) and animal protein (meat). The sandwich represents a new step in the evolution of bread-and-butter combinations. Rubner believes that the growing use of the meat-laden sandwich is attributable, in Germany at least, to the increased employment of tea and coffee, which require some substantial adjuvant, and also to the greater consumption of sugar and alcohol. The latter lead to a lowering of the protein of the diet which is thus equalized by the albuminous sandwich. Added to these factors is the growing tendency, especially among the unmarried classes, to eat outside of the home and to patronize the rapid-service, time-saving, sandwich-dispensing restaurants and eating-houses.

The average composition of the sandwich, if we may identify this for the purpose of argument with its German competitor, shows that it differs from plain bread in the predominant addition of fat with some increase in protein. One can attach but little value to the "average" composition of so heterogeneous a group of products as is represented by bread-and-meat mixtures of all varieties. Broadly speaking, the comparison afforded shows that 100 calories are distributed in the different food materials as follows:

	Calories		
	Protein	Fat	Carbohydrate
In bread	11	3	86
In bread and butter..	5	58	37
In meat sandwiches...	15	53	32

The great concentration of nutrients in a small volume in the sandwich at once becomes apparent here. The work of mastication is reduced and the entire make-up of the product encourages rapid eating with its possibly unfavorable consequences.

The sandwich, as here represented, exemplifies a tendency to increase rather than diminish the proportion of food of animal origin in the dietary of man; but aside from the fact that it is instituting a larger participation in the use of meat and is thus working contrary to what many students of dietetics regard as desirable, this form of food is not as economical as is popularly believed. It is true that a palatable sandwich can be purchased for a few cents. The same proportionate expenditure in the household or in the purchase of a warm meal that deserves the name will procure surprisingly more nutriment, even in the more expensive type of restaurant. It has been calculated, for example, that twenty-five cents will buy:

	Calories		Gm. protein
In a public eating-house....	3,990	containing	108
In a good restaurant.....	1,990	containing	78
In the form of sandwiches...	1,140	containing	30

4. Chittenden, R. H.: Physiological Economy in Nutrition, New York, 1904; The Nutrition of Man, New York, 1907.
5. Rubner, M.: Wandlungen in der Volksernährung, Leipsic, 1913.
6. Rubner, M., and Schulze: Das "belegte Brot" und seine Bedeutung für die Volksernährung, Arch. f. Hyg., 1913, lxxxi, 260.

The sandwich is frequently looked on as the "poor man's lunch" and current practice is tending to increase its use. If it is really desirable to increase the purchasing power of a small daily income so as to augment the part devoted to nutriment, the reform cannot be instituted by pointing to the supposedly inexpensive lunch-counter. The boarding-house and the home wisely administered on the dietetic side still remain the most economical as well as most rational centers for food reforms.

Current Comment

MILK IN MANILA

To those patient sanitarians who, often without much public support, are toiling among us with unflagging energy in the interest of "clean milk," we may offer a bit of indirect encouragement by reciting the incomparably greater trials and tribulations of their colleagues in far distant lands. The quality of fresh milk that is placed on the market in the city of Manila often leaves more to be desired than the least exacting of our local reformers would demand. One reason for this, we are told,[1] is that the cows from which a large proportion of the milk is obtained are kept outside of the city limits, and are the property of persons who probably have only one cow each, and no fixed place of abode. For this reason such enforcement of regulations as is possible in the United States is impracticable in Manila. Much of the milk comes also from the carabao, or water-buffalo. The fats and some other important ingredients in this are often double those found in cow's milk. That it may resemble cow's milk, the milk of the carabao is frequently diluted one-half or more with water. The proteins are then in disproportion, so rice flour is added. If the fats have thus been too greatly reduced, cocoanut oil is sometimes added. This conglomeration, of which one specimen showed a bacterial count of 62,000,000 per cubic centimeter, is not always an ideal mixture for the purpose of human nutrition.

WHAT IS AN ENZYME?

Although everyone realizes that enzymes are without question closely related to the life-processes of the cells and are in some cases the products of their manufacture, it must still be frankly admitted that we have not yet succeeded in characterizing the so-called ferments as definite chemical substances. In truth, nothing conclusive can be stated as to their constitution, nor can they be classified consistently among any of the familiar groups of organic compounds which have a biologic import. Enzymes, in the past, have frequently been assigned to the category of proteins. The reason for this has been that the fermentative properties of certain solutions have usually been associated with the protein fractions contained therein. With respect to their behavior in precipitation, dialysis, alteration by heat, and other properties, the analogy between proteins and enzymes has appeared to be close; so that, pending the extension of knowledge with respect to the chemistry of proteins, some excuse was present for identifying the enzymes as protein in make-up. The enzymes are undoubtedly colloidal in character; and in order to isolate them in greater purity the methods commonly applied to other colloids have been used. The fact that many "purified" enzymes give protein reactions may merely mean that the albuminous material is dragged along mechanically in attempting to isolate the enzymes. Most of the methods for the preparation of them have been such as to justify this assumption. Ohta[1] has succeeded in getting evidence of vigorous enzymatic activity in preparations that are actually free from protein. By digesting commercial emulsin—the enzyme which acts on glucosids like amygdalin—with pancreatic extracts, he has digested away the protein ordinarily found in the crude preparations on the market and has completely removed the proteolytic products by dialysis. The purified emulsin thus prepared was entirely devoid of protein, yet showed the typical hydrolytic action on amygdalin and salicin vigorously. The supposed protein attributes of enzymes must, accordingly, be abandoned.

NEW MEMBER OF THE COUNCIL ON PHARMACY AND CHEMISTRY

As will be noticed elsewhere, Dr. Carl L. Alsberg, chief of the Bureau of Chemistry of the Department of Agriculture, has been elected a member of the Council on Pharmacy and Chemistry. Dr. Alsberg was born in New York City in 1877, his father being a graduate of the University of Jena, and one of the founders of the American Chemical Society. The new member of the Council received his A.B. degree at Columbia University in 1896, and his master's and medical degrees at the same university in 1900. From then until 1903 he did postgraduate work in pharmacology, physiologic chemistry and internal medicine in various foreign universities, studying also at that time with Schmiedeberg, one of the leading pharmacologists of Germany. In 1902 he was appointed assistant in biologic chemistry at the Harvard Medical School, with leave of absence extending for two years to continue his work in Europe, especially at the University of Berlin. In 1905 he became instructor in biologic chemistry at the Harvard Medical School, and jointly with a colleague of the same rank was placed in charge of the department of biologic chemistry. In 1908 he resigned his position at the Harvard Medical School to accept one in the Bureau of Plant Industry of the Department of Agriculture, and in 1912 he was appointed by President Taft as chief of the Bureau of Chemistry, succeeding Dr. Harvey W. Wiley. It is fortunate that the Council can have in its membership men in the front rank in the various branches of medical science. The medical profession is certainly to be congratulated on being able to obtain the cooperation and advice of such men as Dr. Alsberg in the cause to which the Council is devoted. We feel very sure

1. See the Annual Report of the Bureau of Health for the Philippine Islands for the fiscal year, July, 1912, to June 30, 1913, Manila, 1913, p. 14.

1. Ohta, K.: Darstellung von eiweissfreiem Emulsin, Biochem. Ztschr., 1913, lviii, 329.

that few of our readers appreciate the amount of work entailed by membership in the Council, and the fact that this work is done without any remuneration whatever by men who are recognized authorities.

DOES OXIDATION TAKE PLACE IN THE LUNGS?

It was Lavoisier, the first discoverer of the true importance of oxygen, to which he gave its present name, who not only believed that the life-processes were those of oxidation, with the resulting liberation of heat, but also looked on the lungs as the seat of the utilization of oxygen and the production of carbon dioxid. Later it was suggested that if the combustion processes really take place in the lungs the greatest heat would be developed there. This, however, does not happen. Subsequently the idea gained ground that the biologic oxidations take place in the blood, a fluid known to be rich in the essential oxygen as well as in the products of combustion. To-day there is all but unanimous agreement that the energy-yielding oxidations of the body take place in the tissues rather than in the circulating blood. In recent years Bohr and Henriques[1] have again taken up Lavoisier's view regarding the importance of the lungs. They have not claimed that all oxidations are conducted in these organs, but rather believe that some of the combustion processes begun in various tissues of the body furnish incompletely destroyed intermediary products which experience complete oxidation in the lungs. This contention coming from physiologists of note has commanded attention and aroused much criticism. It has remained for the London investigators, Evans and Starling,[2] to furnish convincing evidence of the fact that the lungs do not participate in the oxidative processes. The results of their experiments all indicate that not only in normal tissues supplied with the normal amount of oxygen, but also in conditions of extreme oxygen lack, oxidations begun in the tissues are completed there. The lungs do not exercise any general or specific activity in completing oxidations partially carried through in other tissues.

DENTAL DISPENSARY FOR ALBANY SCHOOLS

The city of Albany, New York, has developed an excellent system of "health direction in the public schools," which it is the aim of the medical director to extend considerably beyond the usual concept of mere medical inspection of schoolchildren. Recently a dental dispensary has been added which aims to take care of the teeth of children who are not able to pay for the services of a dentist. A set of card-blanks has been provided for keeping a record of the dental work done for the pupils. One of the cards contains sociological data concerning the family from which the pupil comes. The cards given to the children recording appointments and granting admission to the dispensary contain practical admonitions to the pupil and parents as to the importance of taking care of the teeth, their influence on the physical and mental development and the bearing of proper development on future success in life, all of which should have a wholesome educational influence. The school work in Albany is an example of how a scientific foundation along lines of school hygiene can be made successful through the cooperation of progressive citizens, trained educators and child hygienists. The dental dispensary is not the least valuable department of this feature of the health work in the public schools.

1. Bohr, C., and Henriques, V.: Arch. de physiol. norm. et path., 1897, ix, 559, 590, 819.
2. Evans, C. L., and Starling, E. H.: The Part Played by the Lungs in the Oxidative Processes of the Body, Jour. Physiol., 1913, xlvi, 413.

RELATION OF WATER-SUPPLIES TO AMEBIC DYSENTERY

Inasmuch as amebic dysentery, though long unrecognized, has hitherto been one of the greatest obstacles to the progress of the white man in the peaceful conquest of the tropics, details regarding it have more than passing interest. A critical study of the incidence of the disease and the literature in relation thereto does not support the belief that the native dweller of the tropics is any more immune to amebic dysentery than is the white man of the temperate zone. Amebas are widely distributed in nature. The question has been raised whether all the varieties found in drinking-water and other places where amebic dysentery prevails are pathogenic. There has been considerable hesitation in some places in using water-supplies, the chemical composition and biologic analysis of which was reasonably good, but which contained amebas. Dr. E. L. Walker, the acting chief of the biologic laboratory of the Bureau of Science at Manila, now reports that it is possible to distinguish between pathogenic and non-pathogenic amebas, and that the ordinary water-ameba found in the Philippines is harmless to man.[1] This is said to accord largely with similar experience in Panama and other tropical countries, and is of far-reaching importance from the point of view of public health. It will now be possible to permit the use of water against which no other charge than the presence of amebas could be made. Furthermore, it emphasizes more than ever the danger of transmission which centers in the infected individual.

1. See the Annual Report of the Bureau of Health for the Philippine Islands for the fiscal year July 1, 1912, to June 30, 1913. Manila, 1913, p. 102.

Medical Education in the United States.—The *Scientific American*, quoting from an interesting report on this subject by Graham Lusk, published in *Science*, states that in spite of the campaign for higher standards waged by the Council on Medical Education of the American Medical Association and other agencies, there are still four states in which it is not necessary that an applicant for medical license be a graduate of a reputable medical college, while in the year 1912 the authorities of Tennessee presented the spectacle of licensing 175 persons [including 33 who were granted temporary licenses after having failed to pass the required examination] who were not graduates of any medical school whatever. As to the medical schools themselves, however, it is gratifying to learn that quality has improved at the expense of quantity. Lusk gives the number of schools in this country as diminished from 166 to 110 since 1904. [The correct figures should show a diminution of medical schools in this country from 160 to 106 since 1904.]

Medical News

CALIFORNIA

Personal.—Dr. Frederick J. Smith, San Diego, was seriously injured, January 22, by being crushed under his overturned automobile.——Dr. Franklin F. Lord, San Francisco, has been seriously ill as the result of an overdose of chloroform, self-administered, on account of insomnia.——Dr. Al. P. O'Brien, member of the board of public health and surgeon of the police department of San Francisco, returned from a trip to the Orient, February 2.

To Assist Accident Board.—Dr. Morton R. Gibbons, medical director of the Industrial Accident Commission of the San Francisco City Compensation Department, has named more than one hundred surgeons in various parts of the state as medical representatives of the department, and twenty-five referees. The duties of the first class will be to treat individuals insured under policy commissions of the State Compensation Department, and of the latter class to inspect the injuries in disputed cases.

COLORADO

Municipal Laboratory Established.—A city laboratory has been installed at Pueblo, with Dr. Carl W. Marynard in charge, which is prepared to do all kinds of bacteriologic work of value from the public health point of view.

Personal.—Dr. Alfred P. Busey, Denver, was seriously injured, February 16, while alighting from a train at Pueblo. ——Dr. Edward W. Lazell, Denver, has been detailed to duty in the Southern coal strike district to investigate an outbreak of spinal meningitis among the troops at Aguila.——Dr. Edward F. Lake, Denver, is reported to be ill with malignant disease in Baltimore.——Dr. Alexander T. King has been appointed vice-president of the Civil Service Board of Pueblo.

New Officers.—Northeastern Colorado District Medical Association at Sterling, February 11: president, Dr. Melvin R. Fox; secretary-treasurer, Dr. N. Eugenia Barney (reelected), both of Sterling.——Solly Society, named after Dr. S. E. Solly in recognition of his work in the scientific treatment of tuberculosis, organized at Colorado Springs, January 23: president, Dr. Charles F. Gardiner; secreary-treasurer, Dr. J. J. Mahoney. ——Boulder County Medical Society at Boulder: president, Dr. James A. Matlack, Longmont.—Medical Society of the City and County of Denver: president, Dr. Carroll, E. Edson; secretary, Dr. William M. Wilkinson, both of Denver.——Pueblo County Medical Society at Pueblo: president, Dr. W. Frederick Singer.——Las Animas County Medical Association at Trinidad: president, Dr. Edward J. Scannell, Trinidad; secretary, Dr. William M. Ogle, Terico.

CONNECTICUT

New Officers.—Hartford Medical Society, January 26: chairman, surgical section, Dr. Alfred M. Rowley; secretary of society, Dr. C. Brewster Brainard.——New Haven Medical Society, January 21: president, Dr. Willis H. Crowe; secretary, Dr. Charles E. Sanford.

Bulletin in New Form.—After twenty-seven years of continuous publication, the *Monthly Bulletin* of the Connecticut State Board of Health appears in new form; smaller in size and more convenient to handle. The first issue for January contains in addition to the vital statistics, notes on the pasteurization of milk and the vaccination propaganda.

Personal.—Dr. John F. Sullivan has been elected president of the Board of Health of New Haven.——Dr. Harry F. L. Locke has been appointed surgeon in charge of the Hartford Isolation Hospital.——Dr. Edward B. Hooker has been elected president of the Hartford Society for the Prevention of Tuberculosis.——Dr. Frederick H. Williams, Bristol, is reported to be seriously ill at his home.

FLORIDA

Dispensary Opened.—A free dispensary has been opened in Jacksonville in the basement of the City Engineering Building. The dispensary will be open from 3:30 to 5:30, Monday, Wednesday and Friday afternoons.

Dairy Wins Medical Society Cup.—V. C. Johnson of the Dinsmore Dairies, Jacksonville, was presented with the silver loving-cup offered by the Duval County Medical Society for the dairy showing the cleanest milk throughout the year 1913.

Ocala has Board of Health.—The city council of Ocala, Fla., has recently passed an ordinance establishing a board of health and appointed Dr. H. F. Watt as city health officer. The ordinance provides for milk, school and market inspection, and other progressive features of well-organized health departments.

Personal.—Dr. J. H. Mills, Tampa, has recovered from an illness of several days.——Dr. Stanley Erwin, Jacksonville, has returned from the Everglades, where he has been treating Indians for hookworm disease.——Dr. George H. Benton announces the opening of his offices in Miami and also the opening of the Sterling-Worth Sanatorium.——Dr. James D. Love, Jacksonville, has been appointed a member of the State Board of Medical Examiners, vice Dr. J. D. Fernandez, deceased.

New Officers.—Putnam County Medical Association organized at Palatka, February 11: president, Dr. George E. Welch; secretary, Dr. J. Cohen Chandler, both of Palatka.——Orange County Medical Society at Orlando: president, Dr. Calvin D. Christ; secretary-treasurer, Dr. Gaston H. Edwards (reelected), both of Orlando.——Bay County Medical Society: president, Dr. D. M. Adams, Panama City; secretary, Dr. James M. Nixon, Millville. Dr. Juriah Pierpont, Pensacola, chairman of the State Council, addressed the society on the importance of organization.

Jacksonville Bacteriologist Retained.—When the budget committee of the city council of Jacksonville prepared the budget for the year 1914, the salary of the city bacteriologist and chemist was not provided for. At a recent public hearing before the finance committee of the council to which a resolution was referred requesting an appropriation for funds to pay the salary of the bacteriologist, strong protests for the retention of the bacteriologist were made by the Duval County Medical Society, the Woman's Club, the Mother's Club, Infant Welfare Society, dairymen and other civic organizations with the result that the finance committee reported favorably to the council and the present incumbent, Dr. W. G. McKay, was retained.

GEORGIA

New Home for Medical Society.—The Georgia Medical Society expects to open its new home in Savannah with a reception some time this month.

New Officers.—Twelfth District Medical Society, at Dublin, January 28: president, Dr. Jefferson D. Herrman, Eastman; secretary-treasurer, Dr. Clinton R. Riner, Summit.

Personal.—Dr. W. R. Winchester, Macon, is critically ill as a result of a cerebral hemorrhage, February 22.——Drs. William H. Doughty and William W. Battey, Augusta, are reported to be seriously ill at their homes.

Surgeons' Club Travels.—The Georgia Surgeons' Club, headed by Dr. Edward C. Davis, Atlanta, left Atlanta February 26, to attend the clinical meeting at New Orleans, February 27 and 28. In addition to the New Orleans program, the club is to make a tour of the surgical clinics of Europe, terminating at the Clinical Congress of North America in London, July 27.

Medical Staff of Hospital.—The following have been named on the medical staff of the Macon Hospital for the year beginning February 1: Dr. Olin H. Weaver, chairman; Dr. Charles C. Harrold, vice-chairman; Drs. Herring Winship, Max Jackson, Joseph R. B. Branch, Frank M. Cunningham, Allen B. Jemison, Harry Moses, James T. Ross, Will D. Hereford, John P. Holmes, Samuel B. Palmer, Thomas E. Blackshear, Charles H. Richardson and William C. Pumpelly.

IDAHO

New Officers.—Pocatello Medical Society, January 21: president, Dr. Edward N. Roberts; secretary-treasurer, Dr. Joseph V. Clothier.

Pre-Medical Course for University.—The Pre-Medical Club of the University of Idaho, Moscow, which was organized recently to urge a two-year pre-medical course at the university, decided to postpone action on the part of the club until the arrival of the new president of the university in April.

Praise for Health Officer.—The work of State Sanitary Inspector James H. Wallis, in cleaning up the state of various sanitary abuses, has received high praise in an article in the *World's Work* for March. The article describes the results obtained by the inspector in compelling reforms in the sanita-

tion and food supply of Pullman dining cars running through Idaho and in cleaning up various slaughter houses, restaurants, hotel kitchens and dairies throughout the state, and in the seizure of various shipments of adulterated foods shipped into the state. In doing this work in regard to foods, it was necessary for him to be appointed a federal inspector of foods by the Department of Agriculture. The vigorous work of Inspector Wallis also extended to the patent medicine people and drug manufacturers who misbrand their preparations.

ILLINOIS

Personal.—Dr. Franklin H. Martin, Chicago, has returned from abroad.——Dr. William G. Hawkey, Belvidere, who has been seriously ill with septicemia, due to an operation wound, is reported to be improving——Dr. Howard L. Beye, Chicago, has been appointed assistant in surgery at the University of Iowa.

Contagious Diseases in the University.—Both scarlet fever and small-pox have been found among the students at the State University at Champaign. Many students have gone home and many others were vaccinated. There have been three deaths from scarlet fever; one, Miss Ona Reno, a nurse in the Julia F. Burnham Training School, who contracted the disease while nursing one of the students who died. The other fatal case was that of Mrs. Harry L. Lingren. On February 26, there were sixteen students ill with scarlet fever.

Honor Retired Surgeon-General.—The medical officers of the Illinois National Guard extended a testimonial banquet, February 25, to Brig.-Gen. S. C. Stanton, who was retired as surgeon-general of the state under the army and militia reorganization law of January 1. Maj. Daniel W. Rogers acted as toastmaster. Brig.-Gen. F. S. Dickson, the adjutant general, chief of staff, made the principal address and at its conclusion presented the guest of honor with a gold Swiss repeater watch, suitably decorated and engraved, on behalf of the medical officers of the state. Dr. Stanton is the last of a triumvirate of surgeon-generals to be retired with the rank of a general officer. The other two were the late Nicholas Senn and Brig.-Gen. Charles Adams.

Chicago

New Rules Regarding Contagious Diseases.—The Health Department has published a new set of rules governing contagious diseases, to become effective March 1. The change consists in a reorganization of the Bureau of Medical Inspection and a revision of the rules and regulations for the care and handling of communicable diseases. The latter involves a lessening of the hardships of quarantine. The city has been divided into 100 school inspection districts, to each of which is assigned one health officer and one nurse. The work of the health officer will be confined to medical inspection of schoolchildren and the exclusion of those with contagious and parasitic diseases. The 100 school districts will be divided into five supervision health officers' districts. The school districts will also be combined into fifty field districts, to each of which an officer will be assigned for field work solely in connection with contagious diseases. The fifty field districts will be combined into twenty-five quarantine districts, each in charge of a quarantine officer, and each group of ten field and five quarantine districts will be under a supervising health officer. The combined field service will be supervised by six inspectors on full time, working from the headquarters of the department. It is asserted that the violators of the quarantine regulations constitute the greatest factor in contagious disease control. Without relaxing in the matter of effective isolation, it is proposed under the new regulations to let up somewhat on the restrictions with respect to the coming and going of working members of a family. In the majority of instances it is expected that they may live at home during the illness of the isolated member and still be permitted to come and go as necessity demands. The new plan and rules are printed in the *Bulletin* of February 21, in which details are given of the measures to be carried out in each particular communicable disease.

MARYLAND

Appointments to State Institutions.—The governor has made the following appointments: board of managers of the State Sanatorium, Sabillasville, Dr. Henry Barton Jacobs, Baltimore, and Dr. Guy Steele, Cambridge.

Children's Ward at Hospital.—A children's ward is to be opened at St. Joseph's Hospital March 19, through the efforts of the Junior Auxiliary, a recently formed organization. The purpose of the auxiliary is to look after the ward and do everything possible for the comfort and relief of the little sufferers.

Personal.—Dr. Fred Carruthers, Baltimore, former coroner of the Northeastern District, who has been suffering from blood poisoning for the past two weeks at the Franklin Square Hospital, is said to be improving.——Dr. George W. Dobbin, Baltimore, is confined to his home on account of a severe sprain of the knee.

Infant Mortality.—Infant mortality in Baltimore compares favorably with that in other states. This work of saving the infants has been by a systematic welfare movement carried on by cooperating public and private agencies. Dr. Jones declares that the figures show a great saving in life compared with the years when the activities for purifying the babies' milk and instructing mothers was not so great. "It is hoped," he says, "that the good work which has been started will continue, and that the coming years will see an even greater decrease in the loss of infant life."

Conference of the Maryland Conservation Association.—Dr. William H. Welch, chairman of the administrative committee of the Johns Hopkins University, in McCoy Hall, opened the second day's session of the Conference of the Maryland Conservation Association. Dr. Welch introduced Dr. Hugh S. Cumming, U. S. P. H. S., who spoke on the "Bearing of Pollution of Tidal Water on Health and the Necessity of Control of Pollution." Dr. Leslie L. Lumsden, U. S. P. H. S., talked on "The Value to Maryland of the Control of Water-Carried Diseases in Town and County and the Measures Necessary to Accomplish It." In his remarks, Dr. Lumsden stated that the death-rate of Baltimore city from typhoid fever could be decreased 90 per cent. by "providing pure water for its people." The truth of this statement was illustrated by the record of Cumberland, where pure water was put into the homes in December and in the first month the typhoid fever rate fell from an average of 40 to 4. He also stated that a peculiar thing about the pure water-supply was that it reduced also the death-rate from pneumonia and tuberculosis.

The Health Congress.—Plans for the Public Health Conference to be held March 9-14 in Osler Hall, Baltimore, have been arranged. On the opening night Mayor Preston and Governor Goldsborough are expected to be present, and addresses will be made by Dr. Leslie L. Lumsden, Washington, D. C., and Dr. Harvey G. Beck. For the following night, Tuesday, a program will be arranged on the timely subject of cancer and radium. The local representatives of the American Society for the Control of Cancer will make the arrangements. On this same evening, H. L. Mencken will speak on how to reach properly the millions through the press. On Wednesday, Mrs. Isaac L. Rice of New York will make an address on "The Noiseless City," and E. A. Thompson, smoke inspector of Baltimore, will discuss the "Smokeless City." On Thursday there will be a symposium on municipal care of infectious diseases. On Friday, Dr. Robert W. Johnson and Charles J. Bonaparte will discuss the relation of the medical profession to the public. On Saturday, John Daniels, secretary of the Social Service Corporation, will make an address on "Needed—A Health Survey," and Rev. M. H. Lichliter will talk on a "New Social Conscience."

Sex Hygiene for Public Schools.—The question of teaching social and sex hygiene in the public schools was brought up at a meeting of the Baltimore School Board February 25, when Dr. Edward W. Janney appeared before the body in company with one of the women members of the alumnae association, asking permission to deliver an address on that subject before an audience of teachers at the Western High School. While Dr. Janney said he had not taken the initiative in the matter, he said he had been approached on the matter and asked to deliver such an address by the president of the alumnae association. In a short address he outlined to the members of the board what he thought was a necessity and deemed it highly important that such a course of instruction should be inaugurated in the schools, in order that the sexes might be informed on the subject. Because of the questionable need for such a radical and debatable plan the board preferred not to take immediate action and it was referred to a committee. It seems that this matter has been brought to the attention of some members of the board previously and before the matter was referred the propriety of such a departure was doubted and protests against it by some of the teachers have been received; some of them intimated that they would refuse to treat the subject in their school, even if they were permitted to do so by the action of the school board. It was plainly evident that the idea did not meet with the approval of the members of the board.

MASSACHUSETTS

Public Lectures.—The eighth of the series of free public lectures given under the auspices of the Harvard Medical School was given at that institution, February 22, by Dr. E. W. Taylor on "Some Causes of Nervous Instability."

Personal.—Dr. Francis W. Peabody has been appointed medical member of a commission which will be sent to China by the Rockefeller Foundation, to study the needs and opportunities for improving medical education, hospitals and public health administration. In this work he will be associated with President Judson of the University of Chicago.——Dr. Edward Clark Streeter has been appointed a member of the board of managers of the Boston Dispensary.

Reorganization of State Board of Insanity.—The Massachusetts State Board of Insanity has been virtually reorganized. Governor Foss, before his retirement, appointed Dr. Vernon Briggs in place of the chairman, Dr. Herbert Howard, and Hon. James M. W. Hall in place of Dr. E. W. Taylor. Governor Walsh, on assuming office, appointed Mr. Roger Walcott to succeed Dr. William F. Whitmore. A new executive officer is now to be chosen; Dr. Daniel E. Fuller, deputy executive officer, has resigned to take up work in Philadelphia.

MICHIGAN

New Officers.—Cheboygan County Medical Association, at Cheboygan, February 17: president, Dr. William F. Reed; secretary, Dr. Charles B. Tweedale, both of Cheboygan.

Anti-Tuberculosis Society Meeting.—At the annual meeting of the Kalamazoo Anti-Tuberculosis Society, the following physicians were unanimously reelected to office: Dr. Herman Ostrander, president; Dr. S. Rudolph Light, treasurer.

Liberal Contributions to Sanatorium.—The campaign to secure an additional fund for an annex to the Detroit Tuberculosis Sanatorium is meeting with favor; more than $22,000 has already been subscribed toward the $62,000 needed by the institution.

Luncheon for Veteran Physicians.—Twenty members of the Ingham County Medical Society gave a luncheon, February 23, in honor of Drs. Julius A. Post and George E. Ranney, both of Lansing, the oldest members of the profession in Ingham County. Dr. Samuel Osborn, Lansing, presided at the dinner.

Medical Aid Bureau to Open.—The Grand Rapids Social Welfare Association has established a medical aid bureau under the direction of Dr. Burton R. Corbus. The bureau is to be used for the examination and diagnosis of cases under the care of the Social Welfare Association, for patients who are able to come to the physician's office, and who are not in need of the services of a nurse.

Berrien County Physicians Shun Publicity.—At the meeting the Berrien County Medical Society at Benton Harbor, February 12, a resolution was unanimously adopted setting forth that indiscriminate advertising by the medical profession is contrary to medical etiquette and disgusting to reputable physicians as suggestive of quackery, and instructing the secretary to request newspapers of the county not to give attending physicians' names when giving an account of sickness, operations, injuries, etc.

Personal.—Dr. Martin A. Mortensen, Battle Creek, has returned from Europe.——Dr. and Mrs. William F. Hake and Dr. and Mrs. Alexander M. Campbell, Grand Rapids, have sailed for Europe.——Dr. Johnson B. Kennedy, president of the Detroit Board of Health has been appointed consulting surgeon to Grace Hospital.——Dr. William H. McEwen, St. Charles, is reported to be ill at his home with heart disease.——Dr. Angus McLean has been appointed a member of the Detroit Board of Health.——Dr. Harold L. Hurley, house physician at the Jackson City Hospital, has resigned and will practice in Jackson.

NEW YORK

Personal.—Dr. B. C. Loveland, Syracuse, was operated on for appendicitis at the Hospital of the Good Shepherd, February 24, and is reported to be doing well.——Prof. C. E. A. Winslow has been appointed advisory expert of public health education by the state commission of health.——Dr. William A. Howe, Phelps, has retired as deputy commissioner of health of the state.

Alien Insane Bill Signed.—The Blauvelt bill which gives the governor the power to appoint a commission to endeavor to obtain federal legislation which will relieve New York state from the care of the alien insane was signed by Governor Glynn on February 19. The governor has appointed Senators Blauvelt and Brown and Dr. Spencer L. Dawes, Albany, as members of this commission. It is estimated that the desired legislation would save the state about $3,000,000 a year.

Illness at Cornell.—Dr. S. A. Mumford, medical advisor of the University, states that 41 per cent. of the illness at Cornell University is caused by common colds, and that these illnesses cost the University $30,000 a year. Physicians of the University are sending an appeal to each student, with the request that as soon as he feels a cold coming on, he shall report it to the medical officers, who have provided printed blanks to be filled out with data concerning the cause, course, treatment, etc.

Welfare Work of New York Telephone Company.—The New York Telephone Company, which earned four medals in this country and abroad for welfare work among its employees, has engaged Lieut. Matthew J. Shields, M. R. C., U. S. Army, to deliver a series of lectures to its employees on accident prevention and first aid to the injured. Their reason for this step is that no matter how many safeguards, safety devices and rules are made only a very small portion of accidents may be prevented without the cooperation of the workers themselves.

Operations on Tonsils.—At the recent meeting of the New York Academy of Medicine, the public health, hospital and budget committee adopted the following resolutions:

Resolved, That it is the sense of this Committee that all operations on the tonsils should be performed in hospitals or in such dispensaries as are provided with operating rooms and with recovery ward facilities.

Resolved, That private hospitals of the city be requested to cooperate with the Health Department of the city in the operative care of children with enlarged tonsils and adenoids; that these hospitals provide proper and adequate facilities for such cases and that the city compensate the hospitals for this special service; and, further, that the public hospitals be requested to provide similar facilities, without special compensation.

Personal.—Col. Sir William B. Leishman, honorary physician to King George V, arrived in New York on the *Carmania*, February 24.——Dr. Hillis Cole has retired from the direction of the division of publicity and education.——Dr. F. C. McClendon, formerly of the faculty of Cornell University, has resigned to accept a similar position with the University of Minnesota.——A dinner was given Dr. Annie S. Daniel, February 19, by the women physicians of New York, in commemoration of her thirty-five years of work among the poor of the East Side of the city.——Dr. Stephen Smith celebrated his ninety-first birthday anniversary, February 19, and was given a dinner by his associates of New York City in honor thereof.

Opposition to Boylan Bill.—This bill which provides a new section of the public health law to regulate the sale of habit-forming drugs is opposed by wholesale and retail druggists and by societies whose aim it is to stamp out the use of these drugs. Dr. Lewis K. Neff opposed the provision that a physician cannot prescribe a habit-forming drug longer than three weeks, declaring it to be a handicap to a physician having a patient with an incurable disease where the use of such a drug is advisable, as consultation with other physicians would entail additional expense. The Society for the Prevention of Crime objected to the bill because it defines the habit-forming drugs, thus limiting the number of cases that may be taken up. New drugs not mentioned in the bill might be invented at any time, permitting those who desire the drugs to get the effects sought by their use.

Oppose Bichlorid Law.—The wholesale and retail druggists of New York have filed a protest with the Board of Health against the ordinance which is to go into effect March 1 to safeguard the sale of bichlorid of mercury. The reason for this protest is that the wholesalers declare that the ordinance is unfair in that it compels the distribution of the drug in small containers, when it has hitherto been customary to dispense it in bulk packages. It is further contended that it is not fair to retailers, as it does not provide for selling bichlorid in the form of a powder. It is stated that this is necessary as the drug often forms part of a prescription. It is also contended that many manufacturing chemists cannot get the machinery to wrap each tablet separately within the short time limit that the ordinance allows. The Board of Health holds that these difficulties have been overcome in Germany and can be met here.

Small-Pox in Niagara Falls.—The January *Bulletin* of the New York State Board of Health dealing with small-pox in the state gives a history of the small-pox epidemic at Niagara Falls. The article sets forth the orders and communications issued and the measures taken to assist the local authorities

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in stamping out the epidemic in that city, which has been a center of strong antivaccination sentiment. The disease first appeared in the spring of 1912 and has existed practically continuously from that time to the present. It became epidemic in November, 1913, and up to the end of December there had occurred about 200 cases. There was a total of 823 cases in the state during 1913, only twenty of which occurred in New York City with more than half the population of the state. On February 24 the small-pox quarantine, which had been enforced for eight weeks, was removed. More than twenty thousand persons have been vaccinated, and there are now sixteen cases of small-pox under quarantine.

Sanitary Supervisors.—The Public Health Council of the State Health Department has prescribed the qualifications of sanitary supervisors and at the meeting of the Public Health Council on Jan. 21, 1913, it was agreed that sanitary supervisors should not be allowed to engage in the regular practice of medicine or in any regular occupation or business, except that they should be at liberty to accept other positions in public health work, such as local health officer, teacher of public health, etc., the State Department of Health retaining the power to determine at any time whether the extent of such work interfered with the proper performance of the duties of sanitary supervisor. It was agreed that the salary should be sufficient to enable competent men to devote their entire time to public health work and to look forward to it as their career. It was agreed that the salary should be $4,000 a year, this to include traveling expenses, the use of an automobile, etc. Details of the requirements will be sent by the department when requested.

NORTH CAROLINA

Fire in State Hospital.—Fire in the State Hospital for the Colored Insane, Goldsboro, February 21, destroyed property to the value of $6,000.

New Officers.—Caldwell County Medical Society, at Charlotte, recently: president, Dr. B. Gamewell Flowers, Granite Falls; secretary-treasurer, Dr. C. Banks McNairy, Lenoir

Personal.—Dr. John W. Wallace, Concord, has returned from a stay of several weeks in the East.——Dr. E. Cooper Person, Pikeville, fractured his arm and nose and sustained other severe injuries in a runaway accident, February 19.——Dr. C. Banks McNairy, Lenoir, has been elected superintendent by the trustees of the North Carolina State School for the Feeble-Minded, to succeed Dr. Ira M. Hardy, Washington.

Hospital Staff Announced.—The Merriwether Memorial Hospital and Training School, Asheville, announces the following staff: dean, Dr. Charles B. Ambler; vice-dean, Dr. Eugene B. Glenn; secretary, Dr. William J. Hunnicutt. The following division officers were elected: medicine, Drs. Chase P. Ambler, Martin L. Stevens, C. E. Cotten and Arthur Reeves; neurology, Dr. Robert S. Carroll; gastro-enterology, Dr. Arthur W. Galloway; genito-urinary diseases, Dr. P. R. Terry; surgery, Dr. Eugene P. Glenn and Dr. F. Webb Griffith; dermatology, Dr. D. William Brownson; pediatrics, Dr. Lewis W. Elias; diseases of the eye, ear, nose and throat, Drs. Edgar R. Russell, Joseph B. Green and Rufus G. Buckner.

Mental Hygienists Elect Officers.—The North Carolina Society of Mental Hygiene, recently organized at Raleigh at the instance of Dr. Albert Anderson, superintendent of the State Hospital for the Insane, has elected the following officers: president, Mr. W. A. Erwin; vice-presidents, Drs. Ernest S. Bullick, Wilmington, and Lewis B. McBrayer, Asheville, and Miss Daisy Denson, Raleigh; secretary, Dr. Albert Anderson, Raleigh (reelected); treasurer, Mr. Joseph G. Brown, Raleigh, and executive committee, Drs. William W. Faison, Goldsboro, John McCampbell, Morgantown, and Mr. Clarence Poe, Raleigh. The purpose of the organization is "to urge a vigorous campaign for education along lines of mental hygiene in all parts of the state, with a view to bringing about a system of prevention of insanity."

OHIO

Personal.—Dr. John J. Kinney, Wooster, has returned from abroad.——Dr. Harrison T. Lee, Athens, fractured his right arm while cranking his motor-car, February 24.——Dr. Thomas J. Dillinger, Murray, is critically ill at his home as a result of a cerebral hemorrhage, February 21.

Health Officers Association Organized.—The Miami Valley Health Officers' Association was organized in Dayton, February 17, by the health officers of Springfield, Hamilton, Middletown, Miamisburg, Dayton, Troy, Piqua and Xenia. Dr. Asa C. Messenger, Xenia, was elected president, and Dr. Alvin L. Light, Dayton, secretary-treasurer.

Cincinnati

Society Proceedings.—The University Medical Society met at the Sinton, February 25, and elected the following officers for the ensuing year: Dr. Howard Schriver, president; Dr. William J. Topmoeller, secretary; Dr. Wade Heiser, treasurer. This society has been but lately organized, and its membership is confined to graduates of the College of Medicine in 1910 and thereafter. Several interesting papers were submitted.

City Hospital.—After a very spirited debate on the part of the members present, provisions creating a department in control of the new City Hospital, and prescribing a method by which the referendum may be invoked were adopted by the Charter Commission at its session held Monday, February 23. The report submitted by the Joint Committee of Social Welfare and General Administration provided for seven members on the board, consisting of the following: The dean of the medical department of the university, the director of the department of social welfare, the health officer, one person confirmed by the mayor after selection by the board of trustees of the University of Cincinnati, and three citizens to be selected by the mayor. Each of the last four members shall serve for a term of six years. In making first appointments, the mayor shall confirm selection of university trustees for a term of six years. The board is to have power to appoint superintendents and have control of finances and business administration of hospitals. The selection of the staff will be dependent on nominations made by the trustees of the university, these selections being made in much the same way and with the same degree of care as is used in the other academic selections. This same hospital board also has been given the control of the branch hospital.

Cleveland

Control of Vice.—The Ministerial Association of Cleveland is endeavoring to influence city officials to discontinue the segregated "red-light" district. Detectives employed by the association counted from 1,500 to 2,500 men and boys visiting the district nightly. Just recently the limits of the "area" were ordered lessened but it is questionable to physicians whether it should be entirely discontinued.

Hospital Notes.—Under the articles of agreement entered into between the city of Cleveland and the trustees of the Western Reserve University the professional work of the Cleveland City Hospital is to be entirely under the supervision of a staff nominated by that school. The visiting men will be grouped under two divisions, namely, medical and surgical, each in charge of a division chief. As already announced, Dr. Carl A. Hamann will head the surgical division and Dr. Edward Perkins Carter the medical; the latter giving his entire time to the direction of his division and teaching. Under the division of surgery will be grouped the departments of general surgery, genito-urinary diseases, nose, ear and throat, eye and obstetrics—each with its own chief; while under medicine are the departments of general medicine, neurology, dermatology and pediatrics, likewise with their separate heads. The hospital, in addition to very broad social service ideals, is to be made essentially a teaching and research hospital. In October the clinical clerk service is to be instituted on the wards for the seniors of the medical department of Western Reserve, as has already been done on the open wards of the Lakeside Hospital.——The Cleveland-Pulte Homeopathic Medical School has heretofore had a service at the hospital; every fourth patient being assigned to them. Under the articles of agreement this service is now to be discontinued, though the homeopathic school will be allowed to teach their students there for the remainder of this school year.——Under the new group plan of the City Hospital, calling for twenty-two buildings, the Contagious Hospital of 100 beds is already done and in operation; while the new Nurses' Home, Administration, Service and Laundry buildings are now under construction and will be finished very soon.——The superintendent of the City Hospital announces that within six months 150 additional beds will be opened up for the exclusive treatment of acute cases of gonorrhea and syphilis. This new departure in this country will fill a greatly needed want for the city of Cleveland and will be watched with great interest by medical men and educators.——St. Luke's Hospital is planning a campaign in the spring to raise $400,000 with which to cancel debts, build a nurses' home, children's and nurses' pavilion. It is also

planned to enlarge the outpatient department, wards and low priced rooms. It is the intention to provide adequate accommodations for physicians and surgeons not on the staff. Remodeled the hospital will accommodate 300 patients.——The St. Vincent's Charity Hospital is planning to break ground for their new wing this spring.

PENNSYLVANIA

Personal.—Drs. Charles E. Hannan and Harry W. Salus, Johnstown, have been elected members of the Mercy Hospital staff.——Dr. Watson Marshall, Pittsburgh, has been appointed demonstrator of laryngology in the University of Pittsburgh School of Medicine.

Health Lectures.—The third of the series of health lectures under the auspices of the Alleghany County Medical Society will be delivered at the East Library Branch of the Y. M. C. A., March 10, by Dr. Isidore H. Alexander, New York City, on Tuberculosis, illustrated with stereopticon views.

Medical Club to Be Formed.—At the meeting of the Williamsport Medical Association, held February 19, in conjunction with the Lycoming County Medical Society, it was decided to form a medical club, which will have set aside for its use a room in the University Club to be used as a library and reading-room.

Medical School Banquet.—The first annual banquet of the School of Medicine of the University of Pittsburgh, was held February 25. The banquet was in charge of the student senate of the medical school, and was attended by both school and faculty members. Mr. J. H. Wagner, president of the student senate, officiated as toastmaster.

Philadelphia

University Receives Two Portraits.—"University Day," the Washington Birthday celebration of the University of Pennsylvania, February 23, was made notable by the gift to the medical school of the portrait, by H. H. Beckinridge, of the late Dr. John H. Musser, and of the portrait by Elsa Koenig Nitsche of the deceased Dr. Rush Shippen Huidekoper.

University Alumni Banquet.—The twenty-second annual dinner of the Philadelphia Alumni Society of the medical department of the University of Pennsylvania, was held at the Bourse, February 21. At the business meeting preceding the dinner the following officers were elected: President, Dr. William A. Hughes; secretary, Dr. William S. Wray.

Rush Society Lecture.—The seventh Rush Society lecture will be given March 11, in lecture room D of the new Medical Laboratory of the University, Thirty-Sixth and Spruce Streets. Dr. John Howland of Johns Hopkins Hospital, Baltimore, will speak on "A Consideration of Certain Aspects of Rachitis." This will also be the annual address before the Alpha Omega Alpha fraternity.

Small-Pox Cases Cause Wholesale Vaccination.—Since February 25, three sections of the city have been roped off and more than 4,000 persons have been vaccinated. Two of these quarantined districts were in the northwestern portion of the city and the third near Twenty-First and Bainbridge. The disease is believed to have been imported from Baltimore, so that every incoming boat from that city is detained at Marcus Hook and all passengers are examined

Personal.—Fire damaged the house of Dr. Frank E. Freeman to the extent of $1,200, February 20.——Dr. Albert E. Blackburn has been reappointed a member of the State Board of Examiners for registration of nurses.——Dr. Alfred C. Marshall has resigned as assistant medical inspector of the Bureau of Health.——Dr. George de Schweinitz had the honorary degree of LL.D. conferred on him by the University of Pennsylvania at the "University Day" exercises, February 23.

TENNESSEE

Personal.—The office of Dr. Bailey P. Lester, Woodbury, was destroyed by fire January 23.——Dr. James C. Hunt, Nashville, is reported to be critically ill.

Chicago Surgeon at Nashville.—Dr. Daniel H. Williams, Chicago, conducted the annual surgical clinic at Meharry College, Nashville, last month. Dr. Williams was elected to honorary membership on the Nashville negro Board of Trade. At Rock City Academy of Medicine, Dr. Williams delivered an address on "Preparation and Postoperative Treatment."

New Officers.—Giles County Medical Society at Pulaski, January 28: president, Dr. James K. Blackburn; secretary, Dr. Eunice C. Freeman, both of Pulaski.——Williamson County Medical Society at Dover, January 22: president, Dr. Cyrus N. Keatts; secretary, Dr. John B. Lahiff, both of Indian Mound.——Knoxville Surgical and Gynecological Society, January 22: president, Dr. Charles M. Drake; secretary-treasurer, Dr. P. Herbert Aeuff (reelected).——Sumner County Medical Society at Gallatin, February 18: president, Dr. Edward Bethpage Wright; secretary-treasurer, Dr. Walter S. Dotson, Gallatin.

In Honor of Veteran Physicians.—Dr. Gustavus B. Thornton, Memphis, was given a handsome gold-headed cane and a shower of flowers by his professional friends, February 1, on the occasion of his seventy-ninth birthday anniversary.——On February 5, Dr. Richard Brook Maury was given a dinner in celebration of his eightieth birthday by forty brother physicians, at which he was presented with a silver loving-cup and an elaborate birthday cake. Dr. Frank Jones presided as toastmaster. Dr. Gustavus B. Thornton spoke on "Dr. Maury the Physician," Dr. Benjamin F. Turner on "Dr. Maury as a Teacher," Bolton Smith on "Dr. Maury the Citizen," and Bishop Gaylor on "Dr. Maury the Churchman."

SOUTH CAROLINA

Personal.—The office and drug-store of Dr. David S. Keisler, Ward, were destroyed by fire, February 2, with a loss of about $2,500.

Pellagra in the State Asylum.—According to the annual report of Superintendent J. W. Babcock, of the State Hospital for the Insane, during the years 1907-1913, more than 900 cases of pellagra were received at the hospital. During 1913, 165 patients died in the institution as the result of the disease.

Will Not Admit Low Grade Graduates.—The Board of Medical Examiners in 1913 passed a resolution to the effect that after July 1, 1914, South Carolina will not admit to its examinations graduates of colleges rated lower than Class B by the Council on Medical Education of the American Medical Association.

GENERAL

New England Alumni of Vermont University.—The twenty-second annual dinner of the New England Alumni Association of the University of Vermont, was held in Boston recently. Dr. Frank H. Clapp, North Grafton, Mass., was elected president, and Dr. Peer P. Johnson, Beverly, Mass., vice-president. Dr. Walter J. Dodd, Boston, is a member of the executive committee.

Federation of Medical Boards Meeting.—The second annual meeting of the State Medical Boards of the United States was held in Chicago, February 25. The following officers were elected: President, Dr. Charles H. Cook, Natick, Mass.; vice-president, Dr. T. Addison McCann, Dayton, Ohio; secretary-treasurer, Dr. Oscar C. Huffman, Albany, N. Y., and executive committee, Drs. John M. Baldy, Philadelphia; Herbert Harlan, Baltimore; Walter L. Bierring.

Medical College Association Meeting.—The Association of American Medical Colleges held its twenty-fourth annual meeting in Chicago, February 25. The following officers were elected: President, Dr. Isidore M. Dyer, Tulane University, New Orleans; vice-president, Dr. Charles R. Bardeen, University of Wisconsin, Madison; secretary-treasurer, Dr. Fred C. Zapffe, Chicago (reelected), and executive committee, Drs. William J. Means, Starling Medical College, Columbus; Randolph Winslow, University of Maryland, Baltimore; Egbert Le Fevre, University and Bellevue Hospital Medical College, New York City.

Fourth Congress of International Society of Surgery.—The Fourth International Congress of Surgery will be held in New York from April 13 to 16, 1914. The meeting will be opened at the Hotel Astor, by the President of the United States April 13, at 11:30 a. m., and the scientific proceedings will begin at 2:30 p. m. the same day. In addition to the papers to be read at the congress operative demonstrations will be given in the different hospitals. The society now numbers about 600 members. Only members will be allowed to participate in the discussions, but the meetings will be open to non-members. Professor Depage of Brussels is secretary.

Bequests and Donations.—The following bequests and donations have recently been announced:

Coburg, Ont., Hospital, donations of $10,000 from Mr. Harry Black, New York City, and $20,000 from Mr. John Helm, Port Hope, Ont.

St. Luke's Hospital, New York City, $10,000 for the endowment of a free bed for destitute physicians and surgeons. St. Mark's Hospital, $1,000; St. Mary's Hospital for Children, $1,000; College of Physicians and Surgeons, New York City, $1,000; New York Academy of Medicine, a portrait of her father, Dr. Thomas C. Cock, by the will of Mrs. Augusta Cock Chapin. Two trusts of $10,000 and $5,000 left to friends during their lifetime, to go after

death to the New York Infant Asylum, and the New York Infirmary for Women and Children.

Seton Hospital, Spuyten Duyvil, the bulk of the estate of Charlotte Scarabin.

Chicago Home for Jewish Orphans and Associated Jewish Charities, each $5,000, by the will of Julie Wedeles.

Winnebago County Isolation Hospital, Rockford, a donation of $6,000 from Ralph Emerson, to be used with a similar amount raised by the Winnebago County Board for the immediate erection of an isolation hospital.

Samuel D. Gross Prize.—The committee having in charge the Samuel D. Gross prize, valued at $1,500, of the Philadelphia Academy of Surgery, announces essays in competition for the prize will be received until Jan. 1, 1915.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one hundred and fifty printed pages, octavo, in length, illustrative of some subject in Surgical Pathology or Surgical Practice, founded on original investigations, the candidates for the prize to be American citizens." It is expressly stipulated that the competitor who receives the prize, shall publish his essay in book form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery, and that on the title page, it shall be stated that to the essay was awarded the Samuel D. Gross Prize of the Philadelphia Academy of Surgery. The essays, which must be written by a single author in the English language, should be sent to the "Trustees of the Samuel D. Gross Prize of the Philadelphia Academy of Surgery, care of the College of Physicians, 19 S. 22nd St., Philadelphia," on or before Jan. 1, 1915. Each essay must be typewritten, distinguished by a motto, and accompanied by a sealed envelope bearing the same motto, containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The Committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The Committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

CANADA

Personals.—Dr. Roger E. Webster, Ottawa, Ont., is visiting the hospitals in New York.——Colonel Sir William Boog Leishman delivered an address on "Typhoid Inoculation" before a special meeting of the Toronto Academy of Medicine, March 2. The previous week Sir William was a guest of the Montreal Medico-Chirurgical Society.——Dr. Robert Abbe, New York City, delivered an address before the Academy of Medicine, Toronto, March 3. Dr. Abbe was the guest of honor at a luncheon at the New York Club given by Dr. William H. B. Aikins.

Hospital News.—A new hospital, erected at a cost of $50,000, was opened at Coburg, Ont., on February 26.——St. Paul's and Alexandra Contagious Disease hospitals, Montreal, admitted 2,265 patients during 1913. There were 2,001 discharges and 204 deaths. The city gives $1 per patient per day to each hospital.——It is proposed to add to the Vancouver General Hospital a maternity hospital, an infectious disease building and new administration quarters at a cost of $700,000. As quite 50 per cent. of the patients come from points in British Columbia outside the city, the government is being asked for a grant of $250,000. More than a million dollars has already been spent on this hospital of which the government only contributed $35,000.

American Bacteriologists Meet.—The Society of American Bacteriologists met in Montreal, Dec. 31, 1913, to January 2, under the presidency of Professor Winslow. As Montreal's water-supply was almost shut off at the time there were only brought together about one-half the numbers expected. There were present workers in the bacteriology of milk and water, agricultural bacteriologists and public health workers. The interest in the meeting settled around the paper read by Dr. N. S. Ferry, Detroit, relative to a coccus he has found in the throats of scarlet fever patients. He admitted, however, he had not been yet able to produce the disease by inoculation of a pure culture. A striking observation was the absence of infection among the nurses in the Detroit Contagious Diseases Hospital, since Dr. Ferry had started to vaccinate them two years ago with pure cultures of this organism, although when he was absent for a few months, and there was no vaccine supply, cases developed as usual.

Canadian Militia Medical Officers.—The seventh annual meeting of the Association of the Officers of the Medical Services of Canada was held in Ottawa, February 24 and 25. Members of the Army Medical Corps attended from all parts of the Dominion. H. R. H. the Duke of Connaught was the guest of honor at the annual banquet on the evening of the 24th and made the presentation of the silver cup, donated annually by Dr. George Sterling Ryerson, Toronto, to Major David B. Bentley M.D., Sarnia, Ont., for the best field ambulance work during 1913. Lieut.-Col. John Taylor Fotheringham, Toronto, presided at the banquet. The following officers were elected: president, Lieut.-Col. Robert T. McDonald, Sutton, Que.; vice-president, Major George A. Campbell, Halifax; secretary, Major Theodore H. Leggett, Ottawa. Dr. G. Carleton Jones, director-general of the military forces of Canada, announced that the Hon. the minister of militia had raised the annual grant to the Association from $500 to $1,000.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 14, 1914.

Mr. Lloyd-George on the Insurance Act

Mr. Lloyd-George's chief medical adviser in connection with the insurance act has been Dr. Christopher Addison, an eminent anatomist formerly lecturer at St. Bartholomew's Hospital, who abandoned science for politics and is now a member of Parliament. At a complimentary dinner to Dr. Addison organized by members of the medical profession, Mr. Lloyd-George presided. In proposing the health of the guest he said that there were now on the panel 20,000 out of the 22,500 physicians in general practice in Great Britain. The government had distributed among them $20,500,000, an average of $1,150 for each physician. In addition $5,000,000 had been spent on drugs. All this was for barely one-third of the population. Assuming that the physicians were paid at the same rate for the rest of the population—and he was informed that they would be paid very much better—the average physician would receive $5,000 a year. Undoubtedly the insurance act had raised the level of the remuneration of the profession. He asserted that the average income of physicians had been increased by from $750 to $2,000 a year. He admitted that the act meant more work for physicians, but as in every other profession, they no doubt did not object to that as they received more pay. On the other hand, the act was a good thing for the community, because previously there must have been millions of people who had no medical attendance at all. Mr. Lloyd-George then pointed out the statement made in a recent article in the *Times* entitled "The Revolt of the Junior Medical Officer: An Effect of the Insurance Act," that the position of physicians was so improved that assistants could be obtained only at prices that were ruinous, and that whereas the position of locum-tenens previously paid $10 or $15 a week, incumbents now received as much as $29 and $40. Yet a year ago the *Times* was printing articles in the same leaded type, with the same sensational headings, complaining that the act meant ruin for the medical profession, which would be dependent on public charity in another year!

Successful Search for a Tube of Radium by Means of the Electroscope

A tube of radium worth over $5,000 was presented to the Liverpool Royal Infirmary. It was used in the treatment of a patient and fixed to his face in the ordinary manner by dressings and left in position all night. When a member of the staff arrived in the morning, he found that the tube was missing. The theory that the patient might have swallowed it was abandoned after a careful search with the Roentgen rays. It was then suggested that the tube might have fallen out and been removed with the sweepings from the floor of the ward. The cart which contained these sweepings was about to leave the infirmary, and orders were given for it to remain. The services of Wilberforce, the physicist of Liverpool University, were requisitioned. When he arrived he placed his electroscope on the edge of the cart, and as a result was able to state that the radium was there. As it was then growing dark the search was discontinued until the following morning, the cart in the meantime being strictly guarded. The search was resumed next day by Wilberforce and the infirmary officials. Dr. Holland, roentgenologist of the infirmary, got into the cart and emptied it of the rubbish, which was placed in buckets. When the twelfth bucket had been handed to Wilberforce he discovered in it the missing tube, which was deposited in safe keeping in the Roentgen-ray department.

The Royal Commission on Venereal Diseases

At the twelfth meeting of the Royal Commission on Venereal Diseases, Dr. J. Kerr Love, aural surgeon to the Royal Infirmary, Glasgow, and to the National Bureau for the Deaf, gave evidence, which dealt largely with syphilis as a cause of deafness in children. This syphilitic deafness he regarded as essentially a disease due to untreated syphilis among the poor. He considered that 25 per cent. of the cases of congenital deafness were due to syphilis and that this form of deafness was hardly ever cured. By treatment the health of the children might be improved, but restoration of hearing was

rarely possible. The cost of education in a deaf child was at least five times as great as in a normal child. He illustrated the effect of syphilis on child life by showing a number of syphilitic family trees. A record of twenty-one families showed that two-thirds of the children born were born dead, or if alive were blind or deaf or both. He considered that improved treatment of syphilis was urgently demanded and should be placed within the reach of all. Some form of notification of the disease he thought desirable, but universal and compulsory notification was not at present feasible. It might, however, be prudent to attack syphilis by a flank movement and to notify certain conditions which are often due to congenital syphilis, following up the information by the Wassermann reaction or any other test that might indicate its presence.

At the thirteenth meeting Major W. S. Harrison, pathologist to the Royal Military Hospital, Rochester Row, gave evidence. He considered that the chief cause of the late manifestations of syphilis was inadequate treatment. Since the treatment of syphilis in the army had been systematized, malignant syphilis had become almost unknown. Adequate treatment should be commenced at the earliest possible stage after the establishment of the diagnosis, and should include prolonged observation clinically and by all laboratory tests. In consequence of recent tests the diagnosis of syphilis, which formerly had been difficult, had now become as exact as that of almost any other disease. It was very important that both the profession and the public should be educated with regard to venereal diseases, and that unqualified persons should be prevented from treating these diseases. He advocated a system of confidential notification at the option of the local authority. In view of the importance of providing facilities for diagnosis and in order to secure early treatment he thought that district and county laboratories should be established under the control of a central national laboratory.

Tuning-Forks in Diagnosis

Mr. James Cantlie, the well-known surgeon and specialist in tropical medicine, has recently pointed out that if a tuning-fork be set vibrating and the shaft placed against the body wall and moved about, a note varying with the density of the organ immediately beneath will be transmitted to a stethoscope. In this way he finds that the limits of the liver can be gaged almost to a hair's breadth. The fork used has a specially designed "striker" attachment so that it need not be removed from position for the purpose of revibrating. He has found this method very useful in cases of small localized pleurisy situated low down in the chest which by ordinary methods cannot easily be differentiated from abscess of the liver or a liver pushed upward by abdominal distention. He compared the results with those obtained by roentgenoscopy and found that they were absolutely accurate. He believes that the method will prove of advantage in diagnosing broken bones. He has further found that different tones are specific to different affections of the liver. Thus a fatty liver gives out tones different from those of cirrhosis. In a letter to the *Lancet*, Dr. Seymour Taylor points out that the use of the tuning-fork is not a new idea. He has used it for years in exploring the chest. The idea was first suggested to him in the eighties of the last century by the lectures of the late Dr. Stone. Dr. Taylor finds a tuning-fork specially advantageous in marking out lung cavities or dilated tubes, but even in these conditions certain physical factors such as the presence of much fluid or pus will lessen the diagnostic aid of the fork. When a cavity is dry the reverberation of the dominant note is distinctly increased over the cavity, and is diminished as the instrument is carried away from the lesion. Again, in men with hard, almost solid ribs, the sounds are better conducted, as one would expect, than in children and young persons with more elastic ribs, which are not such good conductors.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 13, 1914.

Birth Mortality in French Cities

In the attempt to combat the causes of the decrease in population, attention has been directed for several years especially to infant mortality. While it is true that the high death-rate of young infants is one of the chief factors in this decrease, it is one which can easily be corrected by proper precautions. Another factor, which is of somewhat less importance, is the birth mortality. It seems to have escaped notice until Dr. Chambrelent, professor agrégé at the Faculté de médecine de Bordeaux, recently published in the *Revue philanthropique* the results of an interesting research.

Chambrelent divided the cities of France into four sections according to population: first, Paris, with its 2,714,068 inhabitants; second, large cities with more than 100,000 population; third, medium-sized cities between 30,000 and 100,000, and fourth, small cities of from 5,000 to 30,000. He was able to establish the fact that the birth mortality per thousand inhabitants is greater in Paris than anywhere else. It is considerably greater in the large towns than in the medium-sized, and much greater than in the small towns. Another consideration was the annual variation in the birth-rates of the towns studied. If the number of births decreases, it is obvious that the birth mortality will be influenced by this decrease. In order that the results might not be vitiated by this consideration, Chambrelent determined the relation between the number of children born dead and those which, during the same period of time, had been registered as born alive. Here again it was shown that in the decade from 1896 to 1905, the period studied, the coefficient of birth mortality, that is to say, the proportion of the number of children born dead to those born alive, was much larger for Paris, diminishing as before according to the size of the town. Another thing which the investigation brought out was that the coefficient of birth mortality remains nearly constant for each group of towns, varying but slightly from year to year.

In France children are registered as having been born dead if they die before the time when they are registered. As the law permits a delay of three days between the time of birth and the time of registration, the number of the still-born is added to the number of children who die during delivery or afterward up to the time of registration. It would be desirable for the distinction to be made in registering between children actually born dead and those who die later. This is the custom in some other countries, as in Belgium and Italy.

For Widows and Orphans of Military Surgeons

The Chamber of Deputies, without discussion, and after declaring that the measure was urgent, has passed a bill for the relief of the widows and orphans of surgeons and hospital attendants in the health service of the army, the navy and the colonies. The same pensions or other assistance will be given as would be given had the death happened in war, if death results from an epidemic or contagious disease contracted in the service, whether from patients being attended or from laboratory work.

Campaign Against Dirt

At its last meeting the Société de médecine publique et de génie sanitaire adopted a resolution against the exposure of goods for sale on the streets. This will be brought to the attention of the proper authorities in an attempt gradually to stop the practice. Among the reasons for condemning the practice are the following: Safety of pedestrians, who are obliged to use the sidewalk more than ever since the increase in motor traffic; exposure to the weather of the clerks who tend the stands; contamination of exposed foods by dirt. The society of public medicine and sanitary engineering lays special stress on the last two points.

Public First Aid in 1913

Professor Thoinet, for the Conseil d'hygiène, has reported to the prefect of police of Paris the work by the *secours publics* during 1913. At the posts along the Seine and canals 360 persons rescued from the water were received, 254 men and 106 women. Of these, 168 jumped into the water purposely, and only five were dead from having been immersed too long. In the different medical stations in Paris 428 wounded or sick persons were treated. On holidays or special occasions 492 persons were treated. Of these casualties 140 occurred July 14, 110 on the mi-carême, 44 on the day of the running of the Grand Prix, and 37 on mardi gras.

Free Pure-Food Tests

The municipal laboratory of Paris has established the first of the contemplated stations for free tests at different parts of the town, beginning with the populous suburbs. The analyses will be made in the morning, when marketing is being done by housekeepers, and will be carried on for only an hour or two.

Death of Dr. Pichevin

Dr. Pichevin, formerly chief of the gynecologic clinic of the hôpital Necker and the Hôtel-Dieu, and founder of the *Semaine gynécologique*, is dead at the age of 56.

Marriages

JOSEPH R. MORROW, M.D., Belleville, N. J., to Miss Mayme W. Webster of Woodstock, Ont., in New York City, February 14.

EDWIN WILLIS BREYFOGLE, M.D. Chillicothe, Ohio, to Miss Madge Putnam of Franklin, Ky., at Chillicothe, February 12.

ALVAH R. THOMPSON, M.D., to Miss Flora Carolyn Pirkle, both of Buckhead, Ga., at Marietta, Ga., February 19.

HARRY MORTIMER ARCHER, M.D., New York City, to Miss Emilie June Walker of Brooklyn, N. Y., February 17.

CHARLES RAPHAEL CHESNUTT, M.D., Little Rock, Ark., to Miss Helen John Christy of St. Louis, February 24.

ARTHUR L. BROWNING, M.D., to Miss Mary Bowden, both of Hermon, Ill., at Quincy, Ill., February 11.

BERNARD LEE KAHN, M.D., Philadelphia, to Miss Alice Michelsohn of Belmar, N. J., January 25.

GEORGE FRANK GREENLEAF, M.D., to Miss Estella Fuquay, both of Evansville, Ind., February 21.

GEORGE W. HARDING, M.D., Warsaw, Ind., to Miss Ruby Henry of Wabash, Ind., February 16.

JOHN P. HIEBERT, M.D., Altona, Man., to Miss Myrtle Jeffers of Windom, Minn., February 21.

GEORGE SAFLEY MUIRHEAD, M.D., Marion, Iowa, to Miss Huntington, recently.

Deaths

William Wallace Stevens, M.D. University Medical College of Kansas City, Mo., 1901; a Fellow of the American Medical Association; at one time assistant police surgeon of Kansas City; was crushed beneath his overturned motor-car near Independence, Mo., February 19, and died a few minutes later from his injuries; aged 33. The funeral services were conducted by the Jackson County Medical Association, and both honorary and active pall-bearers were physicians of Kansas City.

Thaddeus W. Clark, M.D. University of Maryland, Baltimore, 1880; demonstrator of physiology and chief of clinic of nervous diseases in his Alma Mater; assistant surgeon of the Fifth Maryland Infantry, U. S. V., during the Spanish-American War; formerly assistant quarantine physician of Baltimore; died at the home of his brother-in-law in Baltimore, February 14, from disease of the throat of long standing, aged 62.

Whitmore Snively, M.D. College of Physicians and Surgeons, New York City, 1866; a Fellow of the American Medical Association; professor of practice of medicine and clinical medicine in the Western Pennsylvania Medical College, Pittsburgh; for many years a member of the staff of the West Pennsylvania Hospital; died at his home in East End, Pittsburgh, February 15, from uremia, aged 69.

William Edson Apple, M.D. Jefferson Medical College, 1898; acting assistant surgeon, U. S. Army, with service in Porto Rico and in China during the Boxer campaign; a member of the Association of Military Surgeons of the United States; assistant medical inspector of the Bureau of Health of Philadelphia; died in the Episcopal Hospital in that city, February 15, from septicemia, aged 36.

James Flournoy Beck, M.D. University of Minnesota, College of Homeopathic Medicine and Surgery, Minneapolis, 1896; a Fellow of the American Medical Association; a member of the medical staff of the Minneapolis City Hospital; state medical examiner for the A. O. U. W.; died at his home, February 21, from ptomain poisoning, aged 41.

Benjamin W. Holliday, M.D. Western Reserve University, Cleveland, 1869; a Fellow of the American Medical Association; for seven years professor of anatomy in his Alma Mater; from 1878 to 1885 physician to the Cleveland Infirmary; a member of the staff of Charity Hospital, Cleveland; died at his home, February 18, from cerebral hemorrhage, aged 66.

Edward Robert Holliday, M.D. College of Physicians and Surgeons, Chicago, 1893; a Fellow of the American Medical Association; for one year assistant superintendent of the State Home for the Feeble-Minded, Chippewa Falls, Wis.; died at his home in Ellsworth, Wis., February 17, aged 48.

Lazarus Schoney, M.D. University of Pennsylvania, Philadelphia, 1864; acting assistant surgeon, U. S. Army, during the Civil War; for several years professor of pathology and clinical microscopy in the New York Eclectic Medical College; died at his home on Coney Island, N. Y., February 17, aged 75.

James McDowell, M.D. Kentucky School of Medicine, Louisville, 1854; a Confederate veteran; for many years a practitioner of Jefferson County; and for one term coroner of Bullitt County; died in the State Confederate Home, Pewee Valley, Ky., February 15, from senile debility, aged 89.

Heber McKendry Harvey, M.D. Bellevue Hospital Medical College, 1867; a member of the Medical Society of the District of Columbia; for several years physician of Vanderburg County, Ind.; died at his home in Washington, D. C., February 19, from locomotor ataxia, aged 74.

Brainerd Winslow Dearborn, M.D. Medical School of Maine, Brunswick, 1867; a member of the Minnesota State Medical Association; for ten years a member of the staff of the Swedish Hospital, Minneapolis; died in that institution, February 19, from angina pectoris, aged 74.

Silas W. Hadden, (license, eight years of practice, Michigan, 1900). A practitioner since 1868; a veteran of the Civil War; for many years a resident of Marine City and Port Huron, Mich.; died at the home of his son in Kansas City, Mo., February 11, from senile debility, aged 79.

Stanley Howard MacGillvary, M.D. Bellevue Hospital Medical College, 1890; a Fellow of the American Medical Association; and for fifteen years a practitioner of Brooklyn; died in St. Mary's Hospital in that city, February 16, after an operation for appendicitis, aged 45.

John P. Egglestone (license, Michigan, 1900) a practitioner since 1878; formerly president of the village of Imlay City and postmaster; supervisor, and a member of the school board; recently reappointed postmaster; died at his home in Imlay City, February 19, aged 62.

Otis L. Schrock, M.D. Medical College of Indiana, Indianapolis, 1904; of Greentown, Ind.; aged 32; died in the Marion (Ind.) Hospital, February 17, from injuries received two days before in a collision between a sleigh which he was driving and an interurban car.

James Joseph Burns, M.D. University and Bellevue Hospital Medical College, 1902; a Fellow of the American Medical Association; a practitioner of the Bronx, New York City; died in St. Francis' Hospital, February 19, after an operation for appendicitis, aged 33.

William H. Beck, M.D. Cincinnati College of Medicine and Surgery, 1860; University of Michigan, Ann Arbor, 1861; major and surgeon of volunteers during the Civil War; died at his home in Hartsville, Ind., February 12, from senile debility, aged 87.

Thomas Jefferson Acker, M.D. Bellevue Hospital Medical College, 1865; a Fellow of the American Medical Association; for more than forty-four years a practitioner of Croton-on-Hudson, N. Y.; died at his home in that place, February 15, aged 76.

Susan Fisher Rose, M.D. Homeopathic Hospital College, Cleveland, 1875; of Meadville, Pa.; for ten years Supreme Medical Examiner of the Ladies of the Maccabees; died in the Meadville City Hospital, February 13, from cerebral hemorrhage.

William Seth Turner, M.D. Eclectic Medical Institute, Cincinnati, 1884; a Fellow of the American Medical Association; chief of staff of the Newark (Ohio) City Hospital; died at his home in Newark, February 12, from pneumonia, aged 53.

Howard R. Lowder, M.D. Indiana Medical College, Indianapolis, 1875; formerly a Fellow of the American Medical Association; a veteran of the Civil War; died at his home in Bloomfield, Ind., February 13, from heart disease, aged 69.

David Van Meter Wale, M.D. University of Louisville, 1875; an eye, ear, nose and throat specialist, of Carthage, Mo.; for forty-seven years a resident of Jasper County; died at his home, February 17, from bronchial pneumonia, aged 67.

David C. McMillen (license, examination, Ohio); a practitioner since 1857; assistant surgeon of the One Hundred and Sixty-Third Ohio Volunteer Infantry during the Civil War; died at his home in Mansfield, February 10, aged 81.

John Francis Lilley, M.D. Cooper Medical College, San Francisco, 1897; formerly of Alameda, Cal.; for two years a resident of Albuquerque, N. Mex.; died in Mexico City, February 6, a week after an operation for appendicitis, aged 44.

Albert H. Schmidt, M.D. Missouri Medical College, St. Louis, 1879; of Chicago; formerly of Quincy, Ill.; died in the Monroe Street Hospital, Chicago, February 13, from injuries received in a street-car accident a short time before, aged 55.

Winston Appleby, M.D. St. Louis college of Physicians and Surgeons, 1892; for several years health officer of Bellingham, Wash., but for the last ten years a resident of Anacortes; died at his home in that city, February 16, aged 44.

James Swaze Watson, M.D. University of Michigan, Ann Arbor, 1881; a Fellow of the American Medical Association and a well-known practitioner of Aurora, Ill.; died at his home, February 12, from cerebral hemorrhage, aged 62.

Frank Alexander Sharp, M.D. Jefferson Medical College, 1872; for twenty-seven years physician to Moyamensing Prison, Philadelphia; died at his home in Philadelphia, February 18, from bronchial pneumonia, aged 59.

Benjamin F. Solliday, M.D. Jefferson Medical College, 1865; for many years a practitioner of Benton, Pa.; a veteran of the Civil War; died at the home of his son in Harrisburg, Pa., Dec. 25, 1913, from nephritis, aged 74.

Whitefield Otis Dunham, M.D. University of Maryland, Baltimore, 1891; founder of and surgeon to the Dunham Hospital, Sioux Falls, S. D.; died at his home in that city, February 18, from typhoid fever, aged 53.

Percival Barton, M.D., University of Pennsylvania, Philadelphia, 1849; surgeon of volunteers during the Civil War; formerly of Invergrove, Minn.; died at his home in St. Paul, February 22, from heart disease, aged 91.

Joseph Henry Billingsley, M.D. Pennsylvania Medical College, Gettysburg, 1856; a practitioner of Kentucky and Tennessee until 1882, when he moved to Florida; died at the home of his son in Ocala, February 5, aged 83.

Roscoe C. Sprague, M.D. University of Louisville (Ky.), 1910; of Liberty, N. Y.; for several years a surgeon on Transatlantic steamers; died at his home in Louisville, Ky., February 6, from heart disease, aged 26.

William Karbach, M.D. Eclectic Medical University, Kansas City, 1906; professor of general pathology in the Western Eclectic College of Medicine and surgery, Kansas City, Kan.; died at his home January 22, aged 51.

Geoffrey Strange Beck, M.D. Trinity Medical College, Toronto, Ont., 1881; M.R.C.S., Eng.; of Port Arthur, Ont.; died in Wellesley Hospital, Toronto, Ont., January 11, from arteriosclerosis and nephritis, aged 54.

Belle Page Pilcher, M.D. Eclectic Medical University, Kansas City, Mo., 1904; for several years superintendent of the Helen Lucelle Hospital, Winfield, Kan.; died at the home of her parents in that city, January 29.

Frank P. Wilson, M.D. University of Pennsylvania, Philadelphia, 1865; surgeon of the Fifteenth Pennsylvania Volunteer Infantry during the Civil War; died at his home in Toledo, Ohio, Dec. 28, 1913, aged 71.

Charles Lee Cook, M.D. University of Louisville, Ky., 1907; a member of the State Medical Association of Texas; died at his home in San Angelo, January 22, from pulmonary tuberculosis, aged 34.

Herbert F. Heilner, M.D. Hahnemann Medical College, Philadelphia, 1887; one of the founders and chief of staff of the Hahnemann Hospital, Scranton, Pa.; died in that institution, February 19, aged 50.

Levi D. Satterfield, M.D. Eclectic Medical Institute, Cincinnati, 1857; for many years a practitioner and prominent landowner of southern Kentucky; died in San Diego, Cal., February 11, aged 81.

Edmond Emanuel Kluttz, (license, North Carolina, 1885). A member of the Medical Society of the State of North Carolina; died at his home in Troutmans, February 16, from peritonitis, aged 58.

Thomas Peddie, M.D. Bellevue Hospital Medical College, 1876; for twenty-three years a medical inspector of the New York Board of Health; died at his home in New York City, January 20.

John Flaniken Wilson, M.D. Vanderbilt University, Nashville, Tenn., 1906; a Fellow of the American Medical Association; died at his home in Burlison, Tenn., February 10, from pneumonia.

Niles M. Miller, M.D. University of Pennsylvania, Philadelphia, 1881; Hahnemann Medical College, Philadelphia, 1882; of Philadelphia; died at Avon-by-the-Sea, N. J., January 6, aged 69.

Charles William Miller, M.D. New York University, New York City, 1879; of New York City; died at his summer home in West Falmouth, Cape Cod, Mass., about February 15, aged 56.

George A. Ireland, M.D. University of Nebraska, Lincoln, 1897; of Spring View, Neb.; aged 44; died at that place, February 8, from heart disease, while cranking his automobile.

Howard Beck Reed, M.D. College of Physicians and Surgeons, New York City, 1910; of Seabright, N. J.; died in the Neurological Institute, New York City, Dec. 27, 1913, aged 29.

William Penny, M.D. University of Louisville (Ky.), 1872; for many years in charge of the Penny Dispensary, Bay Ridge, L. I.; died at his home in Brooklyn, January 21, aged 83.

Ephraim Alfred Smedley, M.D. Miami Medical College, Cincinnati, 1883; of North Fairfield, Ohio; died in Mt. Dora, Fla., Dec. 25, 1913, from chronic interstitial nephritis, aged 55.

Ransom P. De Vore, M.D. Detroit (Mich.) Medical College, 1881; of Lyons, Mich.; died in the De Vore Sanitarium in that city, February 9, after a surgical operation, aged 64.

Lewis A. Snell, M.D. Chicago Homeopathic Medical College, 1886; of Charlotte, Mich.; died at the home of his daughter in Los Angeles, Cal., January 22, aged 72.

Felix Joseph Cloutier, M.D. Trinity Medical College, Toronto, 1889; one of the best-known French practitioners of Holyoke, Mass.; died at his home, January 19, aged 49.

Herbert M. Swaney, M.D. University of Pennsylvania, Philadelphia, 1885; of Grand Ledge, Mich.; died in New Hampshire about January 21, from cancer, aged 55.

John Allston Dent, M.D. Maryland Medical College, Baltimore, 1904; of Baltimore; died in the Maryland General Hospital in that city, February 1, aged 52.

Julia N. Moss McGowan, M.D. Northwestern University Medical School, Chicago, 1879; of Monterey, Cal.; died in Pacific Grove, Cal., in January, aged 72.

John Gephart, M.D. Rush Medical College, 1907; a member of the Kansas Medical Society; died at his home in McLouth, February 9, from typhoid fever, aged 33.

Andrew L. Johnson, M.D. Meharry Medical College, Nashville, Tenn., 1902; a colored practitioner of Macon, Ga.; died at his home about January 16, aged 36.

Cornelius Isaac Wainwright, M.D. University of Nebraska, Lincoln, 1905; of Giltner; died at his home in Giltner, Neb., January 13, from pneumonia, aged 33.

Lewis P. Motl, M.D. St. Louis University, 1911; died at his home in Waterloo, Wis., Dec. 26, 1913, from amyloid degeneration of the kidney, aged 28.

David Nelson Coon, M.D. U. S. Army Board, 1863; hospital steward during the Civil War; died at his home in Fort Madison, Iowa, January 18, aged 74.

Raphael G. Thralls, M.D. Indiana Medical College, Indianapolis, 1875; died at his home in Hymera, Ind., Dec. 19, 1913, from tumor of the face, aged 59.

Richard Daniel Fairex, M.D. St. Louis Eclectic Medical College, 1882; of New Orleans; died in Touro Infirmary in that city, January 18, aged 61.

Robert Bruce Baird, M.D. Detroit College of Medicine, 1878; died at his home in Marine City, Mich., November 25, from mastoid abscess, aged 57.

Mason Foshee, M.D. University of Virginia, Charlottesville, 1896; died at his home in Brewton, Ala., February 8, from pneumonia, aged 38.

Job Lee Gregory, M.D. University of Pennsylvania, Philadelphia, 1906; died at his home in Charleston, W. Va., January 30, aged 34.

Burrage Fowler Baker, (license, Wisconsin, 1904). A practitioner since 1881; died at his home in Milwaukee, January 23, aged 56.

Hiram W. Bowman, M.D. University of Wooster, Cleveland, Ohio, 1874; died at his home in St. Joe, Ind., about February 4, aged 64.

Charles T. Baker, M.D. University of Michigan, Ann Arbor, 1854; died at his home in Decatur, Mich., about January 13, aged 84.

John F. Bowman, M.D. Jefferson Medical College, 1865; died at his home in Millersburg, Pa., about January 15, aged 73.

F. B. Robinson, M.D., Edinburgh, Scotland; of Wells, Nev.; died in Reno, January 11, from acute myocarditis, aged 58.

Emerson W. Farrow, M.D. Jefferson Medical College, 1873; died at his home in Ashland, Pa., January 14, aged 67.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

AMORPHOUS PHOSPHORUS *

A Practically Inert Substance Introduced as a Valuable Therapeutic Agent

Amorphous phosphorus is a chemical anomaly contrasting markedly with ordinary phosphorus in its physical, chemical and pharmacologic properties. Ordinary phosphorus is soluble in certain solvents, such as oil; amorphous phosphorus is insoluble. Ordinary phosphorus is poisonous; amorphous phosphorus is not poisonous. Ordinary phosphorus has been regarded as of some therapeutic value; amorphous phosphorus, because of its insolubility and other physical properties, has never been so regarded. Pharmacologists, therefore, have paid very little attention to it. Some of them do not even mention it, though there are a few accounts of experimental work.

Noé,[1] in experiments on the action of phosphorus with yeast, found that yeast acted on ordinary phosphorus, producing PH_3 (hydrogen phosphid), but on amorphous phosphorus it had no action. His experiments show that amorphous phosphorus was not toxic to animals.

Thornton[2] quotes Reese as publishing a report of a case in which 30 grains of amorphous phosphorus were taken by a young woman with suicidal intent, but no toxic symptoms were manifested. Thornton found it non-toxic to animals.

Witthaus and Becker (Medical Jurisprudence, Forensic Medicine and Toxicology, iv, 635) say: "This form of phosphorus is practically non-poisonous, probably by reason of its insolubility. It has been administered to dogs to the extent of 200 gm. (nearly half a pound) in twelve days without causing poisoning."

C. D. F. Phillips (Materia Medica, Pharmacology and Therapeutics, Inorganic Substances, Ed. 3, p. 46) makes the following statement: "Amorphous phosphorus has been, by some observers, credited with physiologic activity. Thus, Bednar used it for a long period in small doses, and observed symptoms of excitation, trembling and clonic convulsions; but as much as 1 ounce has been given to dogs without perceptible effect. Thompson, in twelve carefully observed cases, found its action nil, and plausibly attributes its supposed powers to a slight admixture of ordinary phosphorus (*Pharm. Jour.*, 1875). I believe it is practically inert."

HOW INTRODUCED

The foregoing represents our scientific knowledge as to the action of amorphous phosphorus. Now, however, comes Dr. I. L. Nascher and introduces amorphous phosphorus as a remedy of remarkable value for the arteriosclerosis of old age. The method of introduction is somewhat peculiar. The treatment seems first to have been brought to notice through a printed slip sent to medical journals generally. This slip consisted of an extract from Nascher's book on old age, which at the time had not been published! Nascher also published an article on this subject in an obscure journal, the *American Practitioner*, for December, 1913. Neither the matter copied from his book nor the article referred to contain a single scientific fact that would warrant the claims made for it as a therapeutic agent. No record is given of animal experiments, and the clinical evidence presented certainly cannot be regarded as scientific.

As already stated, this form of phosphorus has not been previously used and has been regarded as without effect on the human system because of its insolubility in any of the liquids of the body. Nascher himself has not been able to find any new way to dissolve it. He says: "I made a number of experiments to find a solvent. The only substance which appears to dissolve it is serum, but I am still uncertain whether it is a solution or a very fine suspension. The phosphorus is precipitated in a few days, but the serum remains tinged." The fact that it separates from the serum on standing is quite conclusive evidence that it is insoluble in that liquid. Since no way of making it soluble has been discovered, there is no reason for expecting it to have any effect on the system. An insoluble and non-absorbable substance can produce no general systemic effect; if, when ingested, it produces any effect whatever, this effect must be local and will be shown by symptoms of gastro-intestinal disturbance. Nascher, however, took 15 grains, and no symptoms of gastro-intestinal disturbance followed. Hence, we must conclude that it is without effect on the gastro-intestinal mucous membrane. While Nascher records no experiments on animals, which is much to be regretted, he did experiment on himself and says:

"Ten grains produced a frontal headache, restlessness, excessive mental stimulation, ideas arising with such vividness as to appear as actual occurrences. There was a sense of weight or oppression in the stomach and priapism, the latter probably psychic, as I was looking for such a result. These symptoms passed away in a few hours."

Without doubt his explanations of the priapism can be applied to the whole experience; whatever symptoms there were, they were unquestionably psychic. The consideration of these subjective symptoms may be dismissed, since it is reasonable to assume that an insoluble, unabsorbable substance which produces no disturbance of the gastro-intestinal tract will have no effect on the rest of the organism.

Amorphous phosphorus did not produce such symptoms as Nascher relates in experiments similar to his made by us. The drug was taken in 10-grain doses by six different individuals. In no case did the symptoms described by Nascher follow; in fact, there were no symptoms whatever.

NASCHER'S THEORY

Nascher, after relating his subjective experiences and those of his patients, proceeds to build a theory to account for the unproved action of amorphous phosphorus in disease, especially in arteriosclerosis. It would have been more appropriate if before advancing the theory, he had made some experiments to prove that the substance has some action. But we give his theory as found in the quotation from his book, sent to medical journals, as already referred to. Here it is:

"Amorphous Phosphorus in Senile Arteriosclerosis: The author has used the red amorphous phosphorus in senile arteriosclerosis for several years. Given originally as a substitute for ordinary phosphorus in senile debility, it was found that it was eliminated as amorphous phosphate of lime and that the lime elimination was thereby increased. Weil's experiments showed that the lime elimination in arteriosclerosis was diminished. Phosphorus has the property of combining with lime and increasing the lime assimilation. In the small doses which can be given when the ordinary phosphorus is employed, the phosphorus will combine with the lime of the food and increase the amount of lime-salts in the body. When given an amorphous phosphorus, the dose is 2 grains or more several time a day, and with a lime-free diet the lime required for the combination necessary to secure the elimination of the phosphorus excess is drawn from the abnormal lime deposits. This appears to be the rationale of the treatment and explains the good results obtained from its use. From 'Diseases of Old Age,' by I. L. Nascher, M.D., to be published shortly."

Thus, according to Nascher, the phosphorus, after being oxidized to phosphoric acid, catches the calcium and drags it out of the system! What are the facts? The human body contains a large store of phosphates which are excreted in the urine in combination with sodium and potassium—

* The so-called amorphous phosphorus is in reality a crystalline body and is more correctly called red phosphorus to distinguish it from the ordinary or yellow phosphorus. It is the ordinary or yellow phosphorus which is official as "Phosphorus."

1. Noé, J.: Action comparée du phosphore blanc et du phosphore rouge sur la matière vivante, Compt. rend. Soc. de biol., 1899, 105, i, 380.

2. Thornton, E. Q.: The Advantages of Amorphous Phosphorus over the Official Form, Therap. Gaz., 1894, xxxv, 19. Tr. Pan. Am. Med. Congress, 1893, Washington, 1895, p. 1,438.

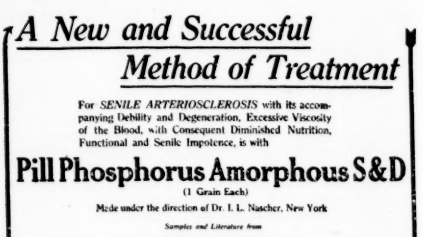
and yet these do not draw the calcium from the blood, brain and bones! To be blunt, Nascher's theory is absurd. The calcium in its various deposits in the body is already combined with phosphoric acid. Why should the phosphorus introduced take calcium from the phosphate radical with which it is already in combination? Nascher asserts that the phosphorus which is introduced as amorphous phosphorus is excreted as amorphous phosphate of lime within twenty-four hours. How does he know it is? It is, of course, very appropriate that amorphous phosphorus should form the amorphous phosphate of lime, but, unfortunately, phosphates made from the ordinary phosphorus also are precipitated in the amorphous condition. By what private mark does Dr. Nascher identify the amorphous phosphate produced by his amorphous phosphorus? Is it not a fact that he found the urine alkaline and detected a precipitate of amorphous calcium phosphate—always present in alkaline urine—and concluded that this must be his particular amorphous phosphorus in combination with calcium?

Dr. Nascher makes no record of examinations of the feces, although a great part—sometimes the greater part—of ingested phosphorus is found in the feces in experimental work on phosphorus metabolism. If he had examined the feces he would doubtless have found the total quantity of amorphous phosphorus unchanged.

Nascher refers to several cases in which he has used this remedy and states that he had the most gratifying results. So far as we can learn, the benefit was entirely in the subjective symptoms of the patient. It seems evident, therefore, that his claims for the value of this remedy rest on no better foundation than an unproved theory without experimental basis.

ITS COMMERCIALIZATION

Thus far we have considered only the scientific aspects of amorphous phosphorus therapy. It is unfortunate that we cannot stop here. Some of our readers will have seen in recent medical journals half-page advertisements of amorphous phosphorus reading:


A New and Successful
Method of Treatment
For SENILE ARTERIOSCLEROSIS with its accompanying Debility and Degeneration, Excessive Viscosity of the Blood, with Consequent Diminished Nutrition, Functional and Senile Impotence, is with
Pill Phosphorus Amorphous S&D
(1 Grain Each)
Made under the direction of Dr. I. L. Nascher, New York
Samples and Literature from
SHARP & DOHME
Chemists since 1860
BALTIMORE
Chicago St. Louis New Orleans Atlanta Philadelphia
NEW YORK

Reproduction — reduced — of half-page advertisement appearing in medical journals.

The striking physical and chemical properties possessed by common phosphorus, together with the fact that phosphorus is one of the constituents of nerve-tissue, are probably responsible for the reputation which this element acquired generations ago as a remedy for sexual impotence and mental decay. Among scientific men this reputation was a fleeting one, for, when put to the test, the product failed. Like so many products with a similar history, the unearned reputation it obtained from medical men survived in the minds of the laity, and, as is always the case, the survival has been taken advantage of by quacks. Among charlatans and nostrum makers phosphorus is still in vogue. "Weak men's specialists" and venders of "lost manhood" and alleged aphrodisiac drugs "play up" the phosphorus fallacy for all it is worth.

It is worth noting that the present exploitation of amorphous phosphorus is following along somewhat similar lines. The asserted actions of amorphous phosphorus are such as may be calculated to appeal to the sexual neurasthenic. There is no doubt that the Sharp & Dohme advertisements will bring about an extensive use of this remedy, especially by the uncritical. The psychic element—which plays so large a part in the sexual neurasthenic—will result in favorable reports being given on the drug. Articles may be expected to appear in a certain class of medical journals, telling of the marvelous results that Dr. John Doe has had in the use of "Pill Phosphorus Amorphous S. & D." A luxuriant crop of testimonials may be expected to follow, and the *tout ensemble* will go far to sustain the Sharp & Dohme propaganda.

We are prompted to believe that Messrs. Sharp & Dohme do not fully realize the potentialities for harm that lie in their present exploitation of amorphous phosphorus. It hardly seems possible that a firm of standing would knowingly put on the market and advertise a worthless drug with an appeal to susceptible, infirm old men. The function of introducing new remedies to the medical profession is a responsible one, and a firm that assumes it should have among its officers some one sufficiently conversant with pharmacologic science to prevent such unscientific absurdities as that exhibited in the marketing of amorphous phosphorus, especially under such claims as those contained in the advertisements.

THE RELIGIOUS PRESS AND THE GREAT AMERICAN FRAUD

The Western Christian Union Gives a Nostrum an Editorial Boost

Time was when the religious press was one of the greatest offenders against public health and common decency in the class of advertisements it tolerated. In the past half-decade, great changes have taken place and the better class of religious journals are now comparatively free from at least the worst forms of medical fraud. Not all of the black sheep, however, have been weeded out. The *Western Christian Union*, published at Booneville, Missouri, edited and owned by the Reverend E. W. Pfaffenberger, comes to its readers February, 1914, with an advertisement of the fraudulent epilepsy cure put out by the Towns Remedy Company, Baltimore. Not only in the advertising pages is the Towns fraud given space; Mr. Pfaffenberger also takes occasion to give it editorial endorsement.

"We have profound respect for Dr. Towns and his splendid remedy" says the Reverend Pfaffenberger. "Believing that we are rendering a Good Samaritan service for the afflicted, we make this little editorial comment, wholly of our own accord, and without money or price."

The Towns concern has been shown up before in these pages and the matter appears at some length in "Nostrums and Quackery." The stuff used to be labeled "Dr. Towns' Epilepsy Cure." As it was not a "cure," and as "Doctor" Towns was not a physician, the exigencies of the Food and Drugs Act made it inadvisable to continue to lie on the label. At present, therefore, we find the stuff labeled not "Dr. Towns' Epilepsy Cure," but "Towns' Epilepsy Treatment." The product is, as usual, a bromid mixture that is taken indiscriminately by the public in doses that no physician with any regard for the welfare of his patient would dare to give.

That the Towns Remedy Company considers the editorial comment of the Reverend E. W. Pfaffenberger a good advertising asset is evident. Persons who have at any time written to the Towns concern and have thus got their names on the company's "sucker list," received a marked copy of the *Western Christian Union* for February, 1914, calling attention to the reverend gentleman's eulogy of the nostrum.

The Reverend Pfaffenberger in the same issue reminds his ministerial readers that he issues a booklet on "Heaven and Our Sainted Loved Ones." This booklet, he says, has been found most helpful by ministers "in preparing funeral addresses." We might suggest that he make a special price on these booklets to the Towns Remedy Company, as we can

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imagine no better place for distributing them than to those unwitting victims of fraudulent and dangerous "cures" for epilepsy.

Seriously, however, we would call the attention of the editor and publisher of the *Western Christian Union* to the grave injury he is doing his readers—and himself—by giving editorial endorsement to so flagrant a fraud as the Towns epilepsy cure. We might further remind him that it is no longer considered good form in journalistic circles for the publishers of any save certain of the privately owned medical journals to give editorial endorsement to the products that appear in their advertising pages.

SODIUM BICARBONATE AS AN ANTIDOTE TO CORROSIVE SUBLIMATE

Much publicity has been given to the subject of poisoning by mercuric chlorid, with the result that the newspapers have reported a veritable epidemic of "corrosive sublimate" suicides. The Chicago newspapers have been giving considerable publicity to a supposed antidote for mercuric chlorid poisoning said to have been originated by a local physician. A specimen of this antidote, sent in by a subscriber, was submitted to our chemical laboratory for examination. The following is the chemist's report:

"The specimen consisted of pink tablets weighing, on an average, 0.35 gm. (about 5½ grains). Besides the pink dye, which was not identified, and a little corn-starch, the tablets appeared to be composed only of sodium bicarbonate. The volumetric estimation of the sodium bicarbonate by titration with acid indicated the presence of 91 per cent. of sodium bicarbonate."

It is evident that the asserted antidote, so far as the specimen submitted to the laboratory is concerned, is simply sodium bicarbonate.

Association News

CONFERENCE OF SECRETARIES OF STATE ASSOCIATIONS

The secretaries of the state associations met in conference at the American Medical Association Building, Chicago, Wednesday morning, February 25, at 9:30, and continued in session during the day.

The following were in attendance: Arizona, C. E. Yount, Prescott; Arkansas, C. P. Meriwether, Little Rock; California, Philip Mills Jones, San Francisco; Delaware, G. W. K. Forrest, Wilmington; Georgia, William C. Lyle, Augusta; Idaho, E. E. Maxey, Boise; Illinois, W. H. Gilmore, Mt. Vernon; Indiana, C. N. Combs, Terre Haute; Iowa, J. W. Osborn, Des Moines; Louisiana, L. R. DeBuys, New Orleans; Maine, John B. Thompson, Bangor; Maryland, W. S. Gardner, Baltimore; Massachusetts, Walter L. Burrage, Boston; Minnesota, Thomas McDavitt, St. Paul; Mississippi, E. F. Howard, Vicksburg; Missouri, E. J. Goodwin, St. Louis; Montana, Herbert D. Kistler, Butte; Nebraska, Joseph M. Aikin, Omaha; Nevada, M. A. Robison, Reno; New Hampshire, D. E. Sullivan, Concord; New Jersey, Thomas N. Gray, East Orange; New York, Wisner R. Townsend, New York; North Carolina, John Ferrell, Washington, D. C.; North Dakota, H. J. Rowe, Casselton; Ohio, C. D. Selby, Toledo; Oklahoma, Claude A. Thompson, Muskogee; Oregon, M. B. Marcellus, Portland; Pennsylvania, C. L. Stevens, Athens; Rhode Island, W. A. Risk, Providence; South Carolina, E. A. Hines, Seneca; Tennessee, Perry Bromberg, Nashville; Texas, Holman Taylor, Fort Worth; Utah, W. Brown Ewing, Salt Lake City; Vermont, J. M. Hamilton, Rutland; West Virginia, A. P. Butt, Davis; Wisconsin, Rock Sleyster, Waupun; Wyoming, W. H. Roberts, Sheridan.

Reports were made on the action taken by the several state associations on the recommendations made by the previous conference of state secretaries looking toward the uniform regulation of membership. These reports showed that the essential features advised had been adopted or were under consideration in the majority of the states. At this time, however, it is impracticable to insist on uniformity in details that are not absolutely essential, as the varying conditions in the several states necessitate certain special regulations which would prove a hardship on others. The subject of the transfer of members was thoroughly discussed—the difficulties which the subject presents as well as the advisability of coming to some uniform regulation in this matter.

The ideals and opportunities of the organization were discussed. The economic problems which the profession must meet, including workingmen's liability and the income tax, were presented to the conference and by resolutions adopted were referred to the appropriate agencies of the Association for further elaboration.

BOARD OF TRUSTEES ELECTIONS

At the meeting, February 27, of the Board of Trustees of the American Medical Association, the following were elected:

Dr. John Howland of Baltimore and Dr. Henry Kraemer of Philadelphia, as members of the Council on Pharmacy and Chemistry; Dr. Carl L. Alsberg, chief of the Bureau of Chemistry of the Department of Agriculture, to succeed Dr. L. F. Kebler on the Council.

Dr. Joseph L. Miller, as a member of the editorial board of the *Archives of Internal Medicine*.

Dr. John Lovett Morse of Boston, as a member of the editorial board of the *American Journal of Diseases of Children*.

Correspondence

A Warning

To the Editor:—A Mr. E. S. Armstrong, supposed to reside at St. Cloud, Minn., has been traveling over the country for years taking orders and payment in advance on clothing which he does not deliver. I was a recent victim. The receipt given shows the name of J. D. Hinshaw, merchant tailor, Boston Block, Minneapolis. Any one knowing the present whereabouts of Mr. Armstrong will confer a favor by writing to me. GAYLORD WORSTELL, M.D., Big Sandy, Mont.

The Value of School Inspection During Epidemics

To the Editor:—February 1, the chairman of the Board of Health notified the school physicians of the ninth school district in South Manchester, Conn., (which has about 2,000 pupils) that seventeen cases of scarlet fever had been reported in a short time, ten of them being in schoolchildren in that district. One case was in the high-school building, seven in the Lincoln School and two in Cooper Hill School.

The following day we began our inspection. Every child in attendance was examined twice the first week and once the following week. Two physicians did the examining, working in the same room so that both could see any suspicious case. Each child rolled up his left sleeve as far as possible and the arm was examined for any rash; and the arm, hand and fingers for any desquamation; also the face, throat and tongue were examined. A physician can easily examine 100 children an hour when the work is systematized.

At the first inspection at the Lincoln School, where seven cases had been reported, we found one child with a rash, red throat and temperature of 100, and another who was peeling. There were also six who seemed suspicious but who were readmitted to school in a few days. At the Cooper Hill School two were found desquamating freely. At the high-school building we found nothing suspicious. The rooms in which the children with scarlet fever had been found and the books and pencils used by those children were fumigated. At the second and third inspections no cases of scarlet fever were found.

In the nineteen days since we began the inspection but one case has developed in the ninth school district. The chil-

dren in this boy's room were examined the day after his case was reported. Four red throats were found which were all right the next day, and one boy was sent home as suspicious to be seen later. The four active cases which we excluded would undoubtedly have been responsible for others, and in an epidemic of mild scarlet fever like the present one it might have continued indefinitely if we had not checked it by the foregoing method.

T. G. SLOAN, M.D., South Manchester, Conn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

QUESTIONABLE TREATMENT OF MERCURIC CHLORID POISONING

To the Editor:—I note in the Chicago *Tribune* for Feb. 18, 1914, a new method of treating bichlorid of mercury poisoning, attributed to Dr. J. M. Hirsch, which raises several interesting questions. According to Dr. Hirsch, ½ teaspoonful of sodium bicarbonate is to be given every hour for two days, and then every four hours for six days. The following is given as the mode of action:

"Soda converts bichloride of mercury into calomel and then into insoluble oxides and carbonates of mercury. Calomel acts as a purgative and rids the intestines of mercury. Some of the mercury oxide unites in the intestines with sulphur compounds to make sulphide of mercury, a relatively harmless substance. If the mercury has already been absorbed the soda dissolves the albuminate of mercury and changes it into calomel and oxides, less harmful forms, which the kidneys then excrete.

"If the vomiting prevents the use of soda by the stomach it should be given as follows: One hundred and twenty grams of chemically pure bicarbonate of soda is dissolved in one pint of salt solution (eight parts to every thousand). Inject sixty minims into a vein once every six hours."

The questions that this method suggests are:

1. Will sodium bicarbonate precipitate a solution of corrosive sublimate?
2. Will it produce calomel from corrosive sublimate?
3. How can the kidneys excrete insoluble calomel and oxids more easily than mercury albuminate?
4. Can 120 gm. of sodium bicarbonate be dissolved in 500 c.c. (1 pint) of 0.8 per cent. sodium chlorid solution? A. W.

ANSWER.—1. No. Sodium bicarbonate will not precipitate mercuric chlorid (corrosive sublimate) quantitatively under conditions similar to those in the stomach. Theoretically this might be interpreted as follows: Mercuric chlorid is one of the salts which are only slightly ionized, and consequently the concentration of the mercuric ion $[Hg^{++}]$ times the square of the concentration of the bicarbonate ion $[\overline{HCO_3}]^2$ is *not* greater than the ion product constant (I. P. C.) for $Hg(HCO_3)_2$.

$$[Hg^{++}] \times [\overline{HCO_3}]^2 < \text{I. P. C.}_{Hg(HCO_3)_2}$$

The mercuric bicarbonate formed in solution, however, is capable of breaking down, but this action will not go to completion unless the carbon dioxid is removed. This would not occur under conditions such as those in the stomach. Experiments conducted in the A. M. A. Laboratory, as well as those reported in standard works, tend to confirm the statement of incomplete precipitation.

2. That sodium bicarbonate will produce mercurous chlorid, HgCl (calomel) from mercuric chlorid, $HgCl_2$ (corrosive sublimate) is contrary to all chemical facts. In order for this to happen the mercuric ion must lose a positive charge, or gain an electron:

$$Hg^{++} - \oplus \rightarrow Hg^{+}$$

In other words, reduction would have to take place, which would be unlikely inasmuch as (*a*) no readily oxidizable substance (that is, no substance capable of taking on an added positive electric charge) would be present; (*b*) mercuric ion $[Hg^{++}]$ is quite stable; therefore, sodium bicarbonate will not reduce mercuric chlorid.

3. We are of the opinion that this is a fallacy. Mercuric albuminate would be more easily excreted by the kidneys than calomel. Probably the oxids and calomel would be entirely eliminated in the feces.

4. Here also Dr. Hirsch has made a mistake. It is impossible to dissolve 120 gm. of sodium bicarbonate in 1 pint (500 c.c.) of water even at 60 C. At body temperature only about 57.5 gm. are soluble in 1 pint of pure water. If sodium chlorid is added (as per directions) this would still further reduce the solubility since a common ion, sodium, $[Na^{+}]$ would be present. This would cause the ionization of sodium bicarbonate to be repressed, and accordingly, in order to establish chemical and physical equilibrium, sodium bicarbonate would necessarily be precipitated from its saturated solution. Hence a still smaller amount of sodium bicarbonate could be dissolved in a salt solution.

"THE ANATOMIST" OF REMBRANDT

To the Editor:—In THE JOURNAL, Feb. 14, 1914, W. M. Barton calls attention to the right arm of the cadaver in "The Anatomist" of Rembrandt, and asks if it is not "egregiously foreshortened." The query paves the way for some important questions, such as:

1. Was art in its early development aided by anatomy?
2. Is a knowledge of anatomy necessary to artists?
3. To what extent should anatomic exactness be required of artists and sculptors?

The third question is pertinent to Dr. Barton's criticism. Artistic anatomy means much more than the study of the dead body; it includes functional activity as well as structural composition; nor can it ignore the effect produced on the external form by such factors as sex, race, age, vocation, disease or the emotions.

The truly great artist must possess something more than the ability to copy what he sees; to manual dexterity and anatomic knowledge he must add a something whereby the results of his studies, and the creations of his imagination, shall impress the minds of others.

While some artists have neglected anatomic study, others, forgetting that it is only a means to an end, have followed dissection to an extreme. One of the greatest offenders was Michelangelo, many of whose works seem to have been made only to show his knowledge of anatomy. The same criticism applies to Baccio Bandinelli. Both masters seem to have delighted in painting muscular figures divested of skin.

Dr. Barton's criticism of Rembrandt's masterpiece is well taken from the anatomic, but is incorrect from the artistic point of view. Many of our best works are incorrect in their anatomy; and often the error has been made intentionally, in order to bring out a specific idea or a certain point of beauty. A scientific anatomist may well criticize the Apollo Belvedere, or the group called Laocoon, figures which are celebrated in the annals of art. The impressive Lion of Lucerne, which Thorwaldsen cut from solid rock to commemorate the brave Swiss defenders of Louis XVI, is far from being leonine in its details. It has a bovine tail, an anonymous mane and an impossible expression; yet, in spite of these anatomic faults, it carries its lesson.

To the credit of the ancient Greek masters it must be said that they never exaggerated their anatomy; and their best works were made by combining the beauties of various models and by adding thereto the fairy flights of the imagination. The finest products of the mallet and chisel date from a period when the internal anatomy of man was unknown. To use the words of Dr. Munro Smith, "Let anatomy and art remain separate, and each would be the better for it."

Rembrandt's canvas was not the first of its kind. The practice of painting "anatomy lessons" began as early as the year 1603—fifty-two years after Philip II had consented that the bodies of criminals should be anatomized by Dutch surgeons; and numerous paintings of this kind were in existence at the time that Rembrandt tried his hand. All of these dissection scenes, with the possible exception of that by Micrevelt, must have been seen by Rembrandt, since they hung in the hall of the Surgeon's Guild in Amsterdam. That he was able to surpass any preceding work of this kind is living evidence of Rembrandt's superior talent.

JAMES MOORES BALL, M.D., St. Louis.

To the Editor:—Referring to Dr. J. F. E. Colgan's query in THE JOURNAL, Feb. 21, 1914, as to an incorrect origin and insertion of a muscle in Rembrandt's "Lesson in Anatomy," I think that the muscle is the pronator teres. I remember as a student that my attention was called to the fact that in the painting there is shown a muscle passing obliquely across the proximal part of the forearm, evidently intended for the pronator teres, but instead of passing from the ulnar distally to the radial side, it passes just the opposite, that is, distally from the radial to the ulnar side.

W. F. R. PHILLIPS, M.D., Mobile, Ala.

ARTICLES ON POLIOMYELITIS OF ANIMALS

To the Editor:—I should like to have some references to literature on poliomyelitis of animals and fowls.

J. M. WALKER, M.D., Kansas City, Mo.

ANSWER.—Following is a list of references to this subject:

Flexner, S., and Clark, P. F.: Paralysis in Dog Simulating Poliomyelitis, *Jour. Exper. Med.*, May, 1913.

Römer, P. H.: Paralysis in Guinea-Pigs Resembling Epidemic Poliomyelitis, *Deutsch. med. Wchnschr.*, June 29, 1911.

Römer, P. H.: Epidemic Poliomyelitis in Guinea-Pigs, *Med. Klin.*, July 9, 1911.

Bruno, J.: Domestic Animals and Fowls in Etiology of Epidemic Poliomyelitis, *München. med. Wchnschr.*, Sept. 9, 1913; abstr., THE JOURNAL, Oct. 18, 1913, p. 1497.

McGowan, J. P., and Rettie, T.: Poliomyelitis in Sheep Suffering from "Louping-Ill," *Jour. Path. and Bacteriol.*, July, 1913.

Neustaedter, M.: Poliomyelitis in Guinea-Pigs, THE JOURNAL, March 29, 1913, p. 982.

Neustaedter, M., and Turo, W. C.: Experimental Poliomyelitis Produced in Monkeys from Dust of Sick-Room, *New York Med. Jour.*, Oct. 21, 1911.

Marks, H. K.: Infection of Rabbits with the Virus of Poliomyelitis, *Jour. Exper. Med.*, August, 1911.

Thomsen, O.: Experimental Poliomyelitis in Monkeys, *Hospitalstid.*, June 5, 1912.

Flexner, S.: Experimental Poliomyelitis in Monkeys, THE JOURNAL, Sept. 24, 1910, p. 1105.

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Flexner, S., and Clark, P. F.: Experimental Poliomeyitis in Monkeys, THE JOURNAL, Feb. 25, 1911, p. 585; *ibid.*, July 27, 1912, p. 273.
Longhorst, H. F.: Possible Transmission of Poliomyelitis through the Dog, THE JOURNAL, Dec. 28, 1912, p. 2312.

ARTICLES ON CARBON MONOXID GAS POISONING

To the Editor:—Please advise me where I can get a book or literature on gas poison as it occurs in the copper mines in this section of the country.

E. C. DEMOSS, M.D., Lordsburg, N. Mex.

ANSWER.—The following references to the treatment of carbon monoxid gas poisoning may be consulted:

McConnell, J. W., and Spiller, William G.: A Clinicopathologic Study of Carbon Monoxid Poisoning, THE JOURNAL, Dec. 14, 1912, p. 2122.
O'Malley, Mary: Carbon Monoxid Poisoning with Acute Symptoms, Relapse with Psychotic Symptoms, and Complete Recovery, THE JOURNAL, Oct. 26, 1912, p. 1540.
Courmont, J.; Morel, and Mouriquand, G.: Chronic Carbon Monoxid Intoxication, *Bull. de l'Acad. de Méd.*, Dec. 20, 1911; abstr., THE JOURNAL, Feb. 4, 1911, p. 384.
Dana, H. W.: Gas Poisoning, *Boston Med. and Surg. Jour.*, May 27, 1909; abstr., THE JOURNAL, July 10, 1909, p. 118.
Jones, G. J.: Illuminating-Gas Poisoning, *Am. Jour. Med. Sc.*, January, 1909; abstr., THE JOURNAL, Feb. 6, 1909, p. 473.
Handbook of Therapy, p. 114.
O'Malley, M.: Psychosis Following Carbon Monoxid Poisoning with Complete Recovery, *Am. Jour. Med. Sc.*, June, 1913.
Clovini, M.: The Leukocytes and Bone-Marrow in Carbon Dioxid Poisoning, *Riforma med.*, 1913, xxix, Nos. 37 and 42.
Fishbein, M.: Illuminating-Gas Poisoning, THE JOURNAL, March 8, 1913, p. 737.
Tammerfeldt, T.: Danger from Explosion Gases in Mining, *Norsk. Mag. f. Lægevidensk.*, February, 1913; abstr., THE JOURNAL, March 15, 1913, p. 874.

ARTICLES ON LANE BONE-PLATES

To the Editor:—Please give references to articles and abstracts on the Lane plates.

J. W. MARTIN, M.D., Des Moines, Iowa.

ANSWER.—Following is a list of references to articles on this subject:

Bartlett, W.: Further Experimental and Clinical Work Bearing on the Value of Lane Bone-Plates, THE JOURNAL, Aug. 3, 1912, p. 346.
Babler, E. A.: End-Results of Sixty-Six Platings, THE JOURNAL, May 25, 1912, p. 1580.
Bartlett, W.: Seventy-Six Operations in Which Lane Bone-Plates were Used, *Boston Med. and Surg. Jour.*, Jan. 30, 1913.
Huntingdon, J. W.: Ununited Fracture Treated Twice Unsuccessfully by Lane Plate Method and Successfully by Insertion of Tibial Bone Plate, *Northwest Med.*, March, 1913.
Bartlett, W.: Treatment of Fractures with Lane Plates, *Illinois Med. Jour.*, April, 1912.
Lane, W. A.: The Use of Plates and Screws in the Operative Treatment of Fractures, *Practitioner*, London, November, 1910.
Lane, W. A.: Operative Treatment of Simple Fractures, *Surg., Gynec. and Obst.*, April 1901; abstr., THE JOURNAL, May 15, 1909, p. 1621.
Wood, A.: Safety Screw-Driver and Screws for Lane Plates, *Med. Rec.*, New York, Dec. 14, 1912.

SALT ENEMAS AFTER CALOMEL—KEROSENE ENEMAS FOR ROUNDWORMS

To the Editor:—1. Is it safe to use a normal salt enema after calomel has been given?
2. Would there be danger of salivation?
3. Is it safe to use enemas of from 4 to 6 ounces of kerosene to destroy roundworms?
4. Would it render it safe to irrigate the rectum with a soap-suds enema afterward?

M. F. MOSLEY, M.D., Oak Park, Ga.

ANSWER.—1. Yes.

2. The action of sodium chlorid on calomel is so slight that there would be practically no danger of salivation under the circumstances named.

3. Kerosene is an irritant which would provoke an evacuation of the bowels and probably leave no permanent bad results. Since roundworms inhabit the small intestine, we doubt the efficacy or advisability of the use of such an irritant for the purpose of destroying them.

4. The irrigation proposed would be an excellent method of removing the irritant oil.

EFFECT OF ADDICTION TO ASPIRIN

To the Editor:—What effect, if any, has aspirin on the mental condition? A nervous woman, aged 45, on the advice of a friend, has, for the past two years, taken 5-grain tablets (one to a dose), from three to ten times daily for neuralgic pains, headaches, etc., and her mental condition is similar to that of one addicted to the morphin habit.

C. R. PONTIUS, M.D., Fremont, Ohio.

ANSWER.—We find no reference in the literature to indicate that aspirin (acetylsalicylic acid) has any effect on the mental condition, nor do we know of any instance in which this drug produced an addiction similar to the morphin habit.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, April 7. Sec., Dr. John Wix Thomas, Phoenix.
COLORADO: Denver, April 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
CONNECTICUT: New Haven, March 10. Sec., Dr. Charles A. Tuttle, New Haven. Homeopathic: New Haven, March 10. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven. Eclectic: New Haven, March 10. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.
IDAHO: Wallace, April 7. Sec., Dr. John F. Schmershall, Jerome.
MAINE: Portland, March 10-11. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.
MASSACHUSETTS: Boston, March 10-12. Sec., Dr. Walter P. Bowers, Room 159, State House, Boston.
MINNESOTA: Minneapolis, April 7-10. Sec., Dr. Thomas McDavitt, 814 Lowry Bldg., St. Paul.
MONTANA: Helena, April 7. Sec., Dr. Wm. C. Riddell, Helena.
NEW MEXICO: Santa Fe, April 13. Sec., Dr. W. E. Kaser, East Las Vegas.
OKLAHOMA: Oklahoma City, April 14. Sec., Dr. John W. Duke, Guthrie.
RHODE ISLAND: Providence, April 2. Sec., Dr. Gardner T. Swarts, Room 315, State House, Providence.
UTAH: Salt Lake City, April 6-7. Sec., Dr. G. F. Harding, 403 Templeton Bldg., Salt Lake City.
WYOMING: Laramie, March 10-12. Sec., Dr. H. E. McCollum, Laramie.

California August Report

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports the written examination held at San Francisco, Aug. 5-8, 1913. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75, with a minimum of 60 per cent. in each subject; credit of five points allowed for each ten years of legal practice, provided a minimum of 60 per cent. in each subject is attained. The total number of candidates examined was 169, including 50 osteopaths, of whom 133 passed, including 34 osteopaths, and 36 failed, including 16 osteopaths. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
California Eclectic Medical College	(1913)	82.2, 90.4
College of Physicians and Surgeons, Los Angeles	(1913)	79.8, 80.2, 80.7, 81.7, 82.7, 83.4, 84.4, 85, 86.4, 86.6, 87, 87.9, 89.3, 90, 91, 91.6, 91.7, 92.7, 92.9.
College of Physicians and Surgeons, San Francisco	(1911) (1912)	75, 76.5. (1913) 87.3.
Hahnemann Medical College, San Francisco	(1912)	75. (1913) 77, 78.8, 79.9, 81.5, 82, 84.4, 84.5, 87.5, 87.5, 90.3.
Leland Stanford Junior University	(1913)	80.1, 84.2, 86.5, 88.6, 89.5, 90.9, 91.1.
Oakland College of Medicine and Surgery	(1909)	86.3, (1913) 81.1, 84.4, 84.8.
University of California	(1912)	99.2, (1913) 86.1, 87.2, 88.2, 88.9, 90, 90.4, 91.3, 93.8, 93.9.
University of Southern California	(1906)	77.9
Denver and Gross College of Medicine	(1906)	92.2
University of Colorado	(1900)	87.7, (1913) 84.7, 88, 91.2
College of Phys. and Surg., Chicago	(1896)	88.1, (1906) 86.1
Northwestern University	(1901)	95.6
Rush Medical College	(1894)	87.7, (1898) 93.8, (1913) 85.3
University of Illinois	(1912)	83.5, (1913) 90.3
Medical College of Indiana	(1885)	85, (1897) 89.1
Hospital College of Medicine, Louisville	(1901)	91.4
Kentucky School of Medicine	(1903)	94.1
Medical School of Maine	(1901)	85.5
Johns Hopkins University	(1906)	88.4, (1913) 87.3
Harvard Medical School	(1913)	87.8
University of Michigan, Dept. of M. & S.	(1908)	87.1
Marion Sims College of Medicine	(1898)	81.1
St. Louis College of Physicians and Surgeons	(1898)	87.7
St. Louis University	(1913)	87.3
Washington University, St. Louis	(1905)	77.5
Omaha Medical College	(1895)	80.3
New York Med. Coll. and Hospital for Women	(1895)	86.6
University of Buffalo	(1909)	79.9
Cleveland University of Medicine and Surgery	(1897)	80.2
Ohio-Miami Medical College	(1912)	76.4
Univ. of Pennsylvania	(1898) 88.7, (1902) 83.1, (1913)	88.7
University of Pittsburgh	(1911)	75
University of Nashville	(1902)	92.5
Vanderbilt University	(1913)	78.5, 84.5, 86.3, 87.4
University of Vermont	(1911)	84.6

FAILED

California Eclectic Medical College	(1913)	64.2, 66.9, 70.1, 72.9
College of Physicians and Surgeons, Los Angeles	(1913)	72.2
College of Physicians and Surgeons, San Francisco	(1911)	29.4
Cooper Medical College, San Francisco	(1906)	72.5
Chicago College of Medicine and Surgery	(1913)	59.9
Hahnemann Medical College, Chicago	(1882) 55.4, (1900)	75.8*
Medical School of Maine	(1896)	64.3

Baltimore Medical College	(1913)	63.6
American Medical College, St. Louis	(1913)	69.4
Parnes Medical College	(1893)	64.5
University Medical College, Kansas City	(1909)	59.8
Eclectic Medical College, Cincinnati	(1913)	70.7
Medical College of Ohio	(1887)	74
Imperial University, Tokyo, Japan	(1892)	78*
Royal University of Naples	(1903)	59.2
Royal College of Physicians and Surgeons, Edinburgh and Glasgow	(1911)	71

* Below 60 per cent. in more than one subject.

The following questions were asked. In each subject only ten questions were to be answered.

ANATOMY

1. Give the topographic anatomy of the elbow. (*b*) Give the topographic anatomy of the hip. 2. Give the surface markings of the following organs: (*a*) spleen, (*b*) pancreas, (*c*) heart, (*d*) right kidney, (*e*) left kidney. 3. Give the relations of the internal iliac artery. 4. Describe the origin and course of the sixth cranial nerve. 5. Describe the ischiorectal fossa. What vessels and nerves are found in this fossa? Name the factors which predispose to abscess in this region. 6. What is the effect of paralysis of the medium nerve? Of the ulnar nerve? 7. Discuss some of the phenomena due to enlargement of the thyroid gland with reference to the anatomic relations of the gland. 8. Describe the plan of distribution of the twelfth dorsal nerve. 9. Name the arteries and nerves which supply the duodenum. What veins drain this region? 10. Describe the lacrimal apparatus. 11. What nerves are likely to be involved in fracture of the middle fossa of the skull? 12. Describe the peritoneum. (*b*) What is its function?

PHYSIOLOGY

1. What variations are found in the composition of healthy blood? 2. What is an isotonic solution, in comparison with the blood? 3. Describe the sounds incident to a normal heart-beat. 4. Describe how variations in resistance to the flow of blood are regulated in peripheral blood-vessels. 5. Give examples of the following classes of enzymes: amylolytic, lipolytic, proteolytic, coagulating, activating. 6. What is the rôle of bile in intestinal digestion? 7. To what extent does the stomach perform the function of absorption? 8. What are the requisites of a normal diet? 9. What value have cutaneous and muscle reflexes? 10. What are the effects on the relations of the gases of the blood, due to alterations in atmospheric pressure? 11. What are the functions of the cerebellum? 12. Describe muscle sense.

CHEMISTRY AND TOXICOLOGY

1. Select the five most important reagents for a urinalysis outfit and state why you select each. 2. Describe Ehrlich's diazoreaction. Of what diagnostic importance is it? 3. What do you understand by "occult" blood and how would you test for it? 4. What is the explanation of souring and curdling of milk? How is soured milk supposed to prolong life? 5. Express in Centigrade 104 Fahrenheit. Give rule for transposing Centigrade to Fahrenheit. 6. What is the poison in most headache powders? Symptoms? Antidote? 7. How would you determine presence of abnormal quantity of chlorin in drinking-water? What does it indicate? 8. Name a secretion in the body containing (1) cholesterin, (2) pepsin, (3) trypsin. 9. Define organic chemistry; inorganic chemistry; physiologic chemistry. 10. Give the chemical and physiologic antidotes of phosphorus poisoning. 11. Give tests for phenol poisoning and antidote. 12. Outline the fate of carbohydrates in the body.

HISTOLOGY

1. Describe a transverse section of the appendix. Make drawing. 2. What microscopic features would enable you to distinguish a section of the submaxillary gland from one of the parotid? 3. What microscopic features would enable you to distinguish a section of the cortex of the ovary from a section of the cortex of the kidney? Make drawings. 4. Describe the microscopic features which would enable you to distinguish a transverse section of the duodenum from a like section through the colon. Make drawing. 5. What histologic features would enable you to distinguish a section of the cerebellum from one of the thymus gland? Make drawings. 6. (*a*) Name all the different forms of sensory nerve-endings (excluding the organs of special sense). (*b*) Motor nerve-endings. (*c*) Describe two forms. 7. Compare a sebaceous gland, histologically, with a sudoriparous gland. Make drawings. 8. Describe the histologic features that would enable you to distinguish a longitudinal section through a spinal ganglion from a transverse section through the spinal cord. Make drawings. 9. How could you distinguish a section through fat showing a transverse section of a medium-sized artery, from a section of lung showing a section across a medium-sized bronchus? Make drawings. 10. How does spermatogenesis differ from karyokinesis? 11. Name all the structures derived from the ectoderm or epiblast. 12. Define the following terms: (*a*) osteoclast, (*b*) mesoderm, (*c*) oogonium, (*d*) spermatid, (*e*) spirem.

PATHOLOGY

1. Describe the repair of traumatic injuries (*a*) non-infected, (*b*) infected. 2. Describe the blood-changes in pernicious anemia and on necropsy. What changes are found in the bone-marrow and in the gastro-intestinal mucous membrane? 3. What changes may take place in the mucous membrane of the stomach after death which may lead to error on necropsy unless taken into consideration? 4. Describe some of the conditions found in the newly born as the result of syphilis. 5. Name five diseases in which the relative number of leukocytes are increased and five in which they remain stationary or are decreased. 6. Describe and locate the pathologic changes in amebic dysentery. 7. Describe the conditions in which sudden and serious edema of the lungs is liable to occur. 8. How does the respiratory tract (nose, bronchi and lungs) protect itself against infectious bacteria, especially the tubercle bacilli, and under what circumstances does infection occur? 9. Describe the condition you would expect to find in the affected lung in a case of pleurisy (*a*) in a favorable case at the end of three days, (*b*) in an unfavorable case at the end of ten days. 10. Locate and describe the changes in the brain in bulbar paralysis and describe the effect on other parts of the body. 11. Give pathology of arteritis and describe the results. 12. Describe the condition resulting from occlusion of the portal vein and give reason for the same.

BACTERIOLOGY

1. Name two Gram-negative bacilli associated with acute or subacute conjunctivitis. How do they differ? 2. What micro-organism causes glanders? Describe a potato culture of the same. 3. What is meant by an "acid-fast bacillus"? Name two examples of pathogenic acid-fast bacilli. 4. What culture and staining peculiarities would enable you to distinguish the *Diplococcus gonorrhoeae* from the *Micrococcus catarrhalis*? 5. What is the agent considered at the present time responsible for the transmission of acute anterior poliomyelitis? (*b*) For the transmission of yellow fever? (*c*) For the transmission of malaria? 6. What do you understand by immunity? How classified? Give an example of each. 7. What do you understand by a bacterial vaccine? (*b*) What do you understand by an autogenous vaccine? (*c*) What do you understand by a polyvalent vaccine? 8. What is diphtheria antitoxin? How does it differ from old tuberculin? 9. What micro-organism is considered the cause of syphilis? Give a brief description. 10. If you were given the head of an animal suspected of having had rabies, how would you confirm the diagnosis? 11. Show by drawing that you would be able to distinguish (*a*) *Bacillus anthracis*, (*b*) *Bacillus tetani*, (*c*) gonococcus, (*d*) *Bacillus diphtheriae*. 12. What non-pathogenic bacillus that might be mistaken for T. B. is commonly present on human beings? How differentiated from T. B.?

GENERAL DIAGNOSIS

1. What factors must be considered in estimating the condition of a patient suffering from diabetes mellitus? What complications are to be feared and what are the terminal symptoms found in this disease? 2. Describe the lesions found in erythema nodosum. 3. From what and how must the rash of scarlet fever be differentiated? 4. What may cause an enlargement of the spleen? Give the accompanying signs and symptoms in any one of those diseases. 5. What factors would you consider in advising for or against surgical intervention in prostatic hypertrophy? 6. Differentiate typhoid fever from tuberculous meningitis. 7. Name and differentiate the bradycardias. 8. Give the symptoms of lateral sinus infection developing in the course of an otitis media. 9. Differentiate an epileptic from a uremic convulsion. 10. On what would you base a diagnosis of infection by the *Ankylostomum duodenale*? 11. Differentiate scabies from urticaria. 12. Differentiate chancre, chancroid and herpes progenitalis.

OBSTETRICS

1. Give some of the more serious symptoms of toxemia of pregnancy with possible effect on mother and child. What is the cause? 2. In difficult labor give technic of delivery of shoulders after head is born. Which shoulder would you deliver first? 3. What is the usual cause of prolapse of pelvic viscera following labor? What measures would you advise for relief of this condition? 4. How does pubiotomy and symphyseotomy differ? Which is attended with greater mortality to mother? 5. Discuss the matter of version. Give the varieties (*a*) with reference to the fetus, (*b*) with reference to mother. 6. In forceps delivery what conditions, complications and emergencies should operator be prepared for? 7. Give the symptoms of incomplete abortion. How would you manage the case? 8. How would you prepare your patient for labor? Dilatation of cervix following labor? What advantages are gained by early operation? 9. In considering the functions of the pelvic floor during labor how does the functions of the posterior segment differ from the anterior? 10. In approximating stage of development from size of womb during pregnancy where would you find the fundus (*a*) at six weeks, (*b*) at twelve weeks, (*c*) at twenty-four weeks, (*d*) at thirty-two weeks? 11. What are the natural forces which tend to control and prevent hemorrhage following delivery, and what artificial means can be used when necessary? 12. In puerperal sepsis what is the difference in the character of the infection and blood-test between sapremia and septicemia?

GYNECOLOGY

1. Make drawing of female internal generative organs, indicating their size and relative location. 2. Describe the female perineum. 3. What is a carunculæ—give symptoms. 4. What may cause an amenorrhea in a woman 30 years of age? 5. Give the symptoms and laboratory findings in cystitis. 6. Name the causes of uterine enlargement and differentiate two. 7. What office equipment is necessary for making a gynecologic examination? 8. Differentiate acute unilateral salpingitis from acute appendicitis. 9. What anatomic changes occur in order that a retroversion of the uterus may develop? 10. Give the early diagnosis of uterine cancer. 11. What are the pathologic and symptomatic sequelae of an unrepaired lacerated perineum? 12. Give the physical and laboratory findings and sequelæ of gonorrhea affecting the female genito-urinary tract.

HYGIENE

1. Define certified milk; inspected milk; pasteurized milk, and give your opinion as to which a municipality should require, considering the matter from a hygienic and economic point of view. 2. What are the causes of ordinary "colds" and what can be done to prevent "catching cold?" 3. Name the three species of tapeworms of which man may become the host. In what food are they found? 4. How does hookworm disease enter the human system and what measures would you take to prevent it? In what states is it most prevalent? 5. What sanitary measures should be adopted in caring for tuberculous patients? 6. What effect have venereal diseases on the propagation of the human species? Explain. 7. What is the period of incubation for each of the following diseases: (1) plague, (2) small-pox, (3) diphtheria, (4) scarlet fever, (5) measles? 8. What hygienic precautions should be observed in a pregnant woman? 9. What should municipal authorities do to reduce infant mortality from digestive diseases? 10. Why is candy one of the articles of diet now supplied soldiers? What are the usual adulterations of candy? 11. What are the causes of mouth-breathing? What are the deleterious effects? What would you do to prevent mouth-breathing in a child? 12. In a typhoid epidemic what would you do to discover the source of infection?

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Book Notices

A MANUAL OF OPERATIVE SURGERY WITH SPECIAL ANATOMY AND SURFACE MARKINGS. By Duncan C. L. Fitzwilliams, M.D., Ch.M., F.R.C.S. Surgeon in Charge of Outpatients, St. Mary's Hospital. Cloth. Price, $3.75 net. Pp. 450, with 284 illustrations. New York: William Wood & Co., 1913.

It is difficult for any text-book on operative surgery, no matter how many pages it may number, to offer anything new. At most the author can merely present the matter in a new way or content himself with describing only such methods as he favors. The purpose of this book is to present the main points in surgical and surface anatomy. In this the author has succeeded well. The large number of pictures which show these markings will prove valuable to the occasional operator or the beginner; but whether either of these should acquire his skill and even first lessons in surgery from a text-book is a debatable question. The pictures, however, are good. The text is well written, although the author fails to mention many well-known and widely adopted procedures, such as Andrews' imbrication method in hernia, the Mayo operation for umbilical hernia and the Ferguson operation for hernia and cleft-palate. Perineal prostatectomy is not mentioned; indeed, American surgeons are not given much attention in the book, in spite of the fact that surgery has received its greatest impetus from American surgeons. The surgical treatment of appendicitis is well described, but only one type of incision is spoken of, and that not the one mostly used. The only operations on the testicle mentioned are those for varicocele and castration. Ovariotomy, hysterectomy, cesarean section and ventrifixation and suspension comprise the operations on the female genito-urinary tract. Abscess and carcinoma apparently are the only diseases of the mammary gland requiring surgical intervention. On the other hand, forty pages are devoted to ligature of arteries, seventeen to operations on nerves, eighty-five to amputations and disarticulations, fifty to osteotomies and excisions of bones, and ten to operations on the air-passages—surely not a fair division if based on the good that may accrue from surgical treatment. As a manual of operative surgery, this book would appear to be a failure—one which can prove of but little value to the practitioner and of practically none to the student.

A TEXT-BOOK ON GONORRHEA AND ITS COMPLICATIONS. By Dr. Georges Luys. Translated and Edited by Arthur Foerster, M.R.C.S., L.R.C.P. Cloth. Price, $4.50 net. Pp. 384, with 203 illustrations. New York: William Wood & Company, 1913.

This translation of an authoritative text-book by a well-known foreign author is exceedingly gratifying in view of the absence of good works in English on this subject, for the author and the translator have intelligently combined to make a work of great value for American readers. A well-written historical summary of the subject forms an interesting first chapter. It is a real text-book in that it endeavors to teach one subject thoroughly. The following statement from the preface of the translator is significant: "Some of our readers will regret that the references to vaccine treatment are brief; but as neither Dr. Luys nor myself are greatly impressed by its achievements, we decided not to enlarge the paragraph relating to it." The book is profusely illustrated. The work is reliable, simple and carefully written, and therefore to be recommended for those interested in this difficult subject.

DISEASES AND DEFORMITIES OF THE FOOT. By John Joseph Nutt, B.L., M.D., Surgeon-in-Chief, New York State Hospital for the Care of Crippled and Deformed Children. Cloth. Price, $2.75. Pp. 293, with illustrations. New York: E. B. Treat & Co., 1913.

At the present time when the rush of work in cities is bringing about an increase in deformities and diseases of the feet, this book is opportune. The author says: "With regard to the feet, much of the treatment is so simple that the general practitioner can and should assume the responsibility of preventing deformities, correcting abuses and those conditions which have already occurred and treating minor diseases of the bones and joints. In the first chapter, the anatomy of the foot is considered with special attention to the relation of the effects produced by various muscle pulls. Perhaps the most important chapter is the second which considers especially the relation of distribution of weight and movements of the foot in their relation to pain. The methods of examination are next considered, and then various special disturbances are thoroughly discussed from a general point of view. In the last two chapters more common complaints as painful heel, excessive sweating, corns, ingrowing toe-nail, callosities and finally foot-apparel are given attention. It would seem that the first three and last two chapters should be thoroughly studied by every physician in order that the general practitioner might be better prepared to undertake the treatment of those conditions with which he can cope as successfully as the trained orthopedist.

ORTHOPEDICS IN MEDICAL PRACTICE. By Prof. Adolf Lorenz, Regierungsrat, Director of the Imperial University Ambulatorium for Orthopedic Surgery, and Dr. Alfred Saxl, Assistant Surgeon in the Imperial Ambulatorium for Orthopedic Surgery in Vienna. Authorized translation by L. C. Peel Ritchie, Ch.M., F.R.C.S. Cloth. Price, $3 net. Pp. 288, with 39 illustrations. New York: William Wood & Co., 1913.

This translation of an authoritative German work should be extremely welcome to the general practitioner. The book is intended to bring out particularly the various orthopedic conditions occurring in the average practice and to aid especially in early diagnosis. The various parts of the body are considered under the head of systems, and the relations of orthopedic disturbances to functional and organic diseases of various parts are analyzed. Early and differential diagnosis of the symptoms presented receive complete consideration. The work is excellent for the man in general practice and for the physician who has specialized along other than orthopedic lines, and is a guide for the orthopedic specialist himself.

A THOUSAND BOOKS FOR THE HOSPITAL LIBRARY. Selected from the Shelf-List of the Library of McLean Hospital, Waverley, Mass. By Edith Kathleen Jones, Librarian. With Additions and Annotations by Miriam E. Carey, Supervisor of Institution Libraries, Minnesota State Board of Control. Florence Waugh, Librarian for State Institutions, Nebraska Library Commission, and Julia A. Robinson, Secretary Iowa Library Commission. Paper. Price, 25 cents. Pp. 56. Chicago: American Library Association, 1913.

This pamphlet is offered as a guide toward the selection of wholesome readable literature for those who are ill, either physically or mentally. Short notes are given which are an index to the contents of the various books recommended. A careful study of the titles shows that no book has been included which cannot safely be put into the hands of any invalid.

TEXT-BOOK OF ANATOMY AND PHYSIOLOGY FOR NURSES. By Amy E. Pope, Instructor in the School of Nursing of the Presbyterian Hospital in the City of New York. Cloth. Price, $1.75 net. Pp. 554, with 135 illustrations. New York: G. P. Putnam's Sons, 1913.

This book gives much more space to physiology than to anatomy, differing in this respect from "Anatomy and Physiology for Nurses" by Diana Kimber, probably the most popular of its predecessors. There is a glossary which is so comprehensive that it might almost do duty as a dictionary; unfortunately the derivations of the words are not given. A table of "food values of a few food materials and prepared foods" is valuable, though it belongs properly in a book on dietetics instead of in a work on anatomy and physiology.

HERMANN LENHARTZ MIKROSKOPIE UND CHEMIE AM KRANKENBETT. Von Professor Dr. Erich Meyer, Vorstand der Medizin. Universitätspoliklinik zu Strassburg i. E. Seventh Edition. Cloth. Price, 10 marks. Pp. 391, with 144 illustrations. Berlin: Julius Springer, 1913.

The seventh edition of this German guide to clinical diagnosis has been carefully prepared with the same degree of accuracy and regard for that which is reliable as well as new that has characterized previous editions. It is printed on a good quality of paper and there are some fine illustrations reproduced in colors.

Miscellany

New Method for Therapeutic Use of Typhoid Vaccine.

Dr. I. S. Kahn, San Antonio, Tex. (*Jour. Texas State Med. Soc.*, February, 1914), urges the use of small repeated doses of three or five million organisms in the treatment of typhoid. The results by this method are apparently just as satisfactory as from the use of larger doses. The culture used by him was ordinary prophylactic stock culture, diluted down with freshly boiled water.

That these small doses can produce general systemic results is shown by a rather curious experiment. Early in October, with a view to demonstrating that the presence of a local and slight systemic result would be of a diagnostic value in cases of typhoid before the appearance of the Widal agglutination reaction, and their absence of decided negative diagnostic value, Kahn administered to himself and the matron of the San Antonio City Hospital, each 5 million killed organisms of the culture he was then using as a therapeutic agent, neither of them having previously received the preventive prophylactic inoculations, and both with negative Widal reactions, excepting a negative result in each instance. The amount of the injection was 2½ minims. Marked local reactions appeared, five or six times the extent in area that would have been produced by similar injections of a sterile innocuous solution, and general constitutional symptoms of appreciable severity set in within three or four hours and were severe enough to warn Kahn never to exceed this dosage with typhoid patients already sick and febrile, until its previous administration had proved harmless.

He accounts for the occurrence of the positive local and general reactions on the score of old long-healed aborted or unsuspected typhoid infections, general or local, in the same manner as similar positive tuberculin reactions are explained in apparently healthy non-tuberculous persons. In all of his ten cases, the initial dose of from 3 to 5 million produced a local arm skin reaction. In only one or two instances was there an immediate temperature rise of from 0.5 to 1 degree of a few hours duration. Ordinarily no such rise appeared, and not a single patient felt any worse for the injection. Though the temperature remained unaltered as a general rule for the first few days following the initial injection, every patient showed a decided improvement in facial expression. All seemed brighter and less typhoidal. This change could be noticed within twenty-four hours. From Kahn's work it appears that a positive phase following this dosage is not induced before the expiration of from seventy-two to ninety-six hours. At this point usually a decline in temperature appears, at times assuming the wide morning remissions and a high evening rise so characteristic of the third week of the disease. Whether this decline appears or otherwise, the dose is not repeated.

If following any single injection a decline in temperature or a slow lysis is induced, succeeding injections are not repeated until the decline ceases. But Kahn has almost invariably had better results by repeating the initial dose on the third or fourth day, whether there are indications of decline or otherwise. It is following the second dose, given at the onset of the positive phase, that improvement usually becomes evident. If the local reaction at this time be slight or absent the next dose is doubled. If present and moderate, the next dose is not increased. That is, the initial dose, the interval to the second dose, and the second dose are more or less arbitrarily fixed. The size and intervals of the succeeding doses are governed by the local reaction and the temperature chart. If there is a decline, which is usually the case, no dose is given until the cessation of this decline, when the dose producing the decline is repeated, and doubled only if farther decline is not induced.

Foci of Incipient Tuberculosis.—In adults the existence of an incipient pulmonary tuberculosis can be demonstrated easily by careful percussion (provided that during the examination of the front of the chest the patient is in the recumbent position with relaxed muscles) long before any bacteriologic evidence is obtainable, and while the auscultatory evidence is insufficient for a diagnosis. In the upper lobe of each lung a focus of incipient pulmonary tuberculosis can be detected by careful percussion in the inner part of the first and second intercostal spaces in front, and in the inner part of the suprascapular space. A second focus can be detected in the outer part of the first and second intercostal spaces in front, and in the outer part of the suprascapular space. A third focus can be detected in the upper part of the lower lobe on each side by careful percussion at the posterior end of the scapular spine. These six dull areas are present in all cases of early pulmonary tuberculosis. I believe that they are not produced by any other morbid condition, and that they are sufficient for the diagnosis of a (past or present) tuberculous infection. Whether that infection is active or quiescent must be determined by the symptoms and auscultatory signs. In addition to the six apical areas, many other small dull areas can be found in the lungs in cases of early pulmonary tuberculosis. The position of these areas is practically invariable; they are nearly symmetrical in the two lungs, but show certain differences, which evidently result from the existence of three lobes in the right lung and of only two in the left.—D. B. Lees, M.D., in *Brit. Jour. Child. Dis.*

Child Labor Laws.—Massachusetts has a law providing for an eight-hour day for children under 16 years of age. A committee, appointed by the legislature to investigate the working of the law, recently made a report. While the report was not unanimous, it is said that the majority of the employers of children between the ages of 14 and 16 have been able to adjust their work so as to permit the employment of minors for no more than eight hours a day. While a number of unavoidable cases of hardship have been encountered by the committee under the working of this law, it is the opinion of the committee that they do not constitute a sufficient reason for its repeal. This investigation by the committee was begun immediately with the adoption of the law and covered the first four months of its existence. In Pennsylvania, it is said, more children under 16 years of age are employed in mills and factories than in any other state. In textile factories, children work fifty-eight hours a week. In glass factories young boys in some instances work all night long. Legislation to remedy these conditions has heretofore failed, but an attempt will again be made at the 1915 session of the Pennsylvania legislature to secure for children under 16 years of age an eight-hour day, to abolish night work, and to bring about a restriction of employment in certain dangerous trades.

Health Problems of Italy in the Fifteenth Century.—In an analysis of legislation in various countries on compulsory declaration of tuberculosis, A. Cramer (*Rev. méd. de la Suisse Rom.*, 1914, xxix, No. 1) calls attention to the fact that in 1481 the little republic of Lucca in Italy elected three citizens to serve as a board of health with full power to act in case of epidemics. They kept in touch with other countries to be forewarned of epidemics, and had the power to forbid entrance into the state of persons, animals or goods until after quarantine or disinfection. In 1699 a decree was passed that every case of tuberculosis must be reported by the physician to the authorities under penalty of 100 ecus. Circulars were distributed to families after the death of a consumptive, giving instructions to the family to beat and brush outdoors the curtains and other furnishings of the rooms. Consumptives were advised to select rooms facing the south or east. All classes, rich and poor, monks and nuns and laity, were compelled to conform to the regulations. A separate hospital for the tuberculous was planned but was never organized, on account of lack of funds. Compulsory declaration was enforced until 1799, when the republic lost its independence. Thus on a purely empiric basis the people of an older time wisely guarded themselves against propagation of infectious diseases.

Medicolegal

Chiropractics Under Wisconsin Law—Convictions Not Annullable by Habeas Corpus

(Arnold, Sheriff, vs. Schmidt (Wis.), 143 N. W. R. 1055)

The Supreme Court of Wisconsin reverses an order discharging the defendant on a writ of habeas corpus after he had been convicted of violating the state statute which prescribes qualifications for practicing medicine, surgery or osteopathy, and imposes penalties for unlicensed practice.

The complaint charged that the defendant did unlawfully and without authority hold himself out to the public as a physician, surgeon, and osteopathist, did practice medicine, surgery, and osteopathy, and did for a fee and for a compensation prescribe and recommend for a like use and apply medical and surgical treatment and osteopathic manipulation for the cure and relief of wounds, bodily infirmities, and diseases, not having obtained a license authorizing him so to do. If the complaint had charged that the defendant carried on business as a chiropractic, and did for a fee or compensation prescribe or recommend chiropractic manipulation, it is probable that the complaint would have stated no offense; but, if to this were joined an averment that that which the defendant practiced and carried on and prescribed was in fact a branch of osteopathy, although the defendant called it by the other name, the complaint would be good. So under the complaint and the evidence in this case the district court had jurisdiction to decide this question. It might have been convinced that the defendant was practicing osteopathy, notwithstanding he chose to call it by another name. It had jurisdiction to construe this statute, and, if it erred in its construction so as to make the term "osteopathy" cover more than it should cover, and include the quite similar acts done by the defendant, the remedy was by appeal and not by an abuse of the writ of habeas corpus.

In this case the court need consider only the charge of practicing osteopathy for a fee without having a license or certificate of registration. Osteopathy is defined in Webster's New International Dictionary as "a system of treatment based on the theory that diseases are chiefly due to deranged mechanism of the bones, nerves, blood-vessels, and other tissues, and can be remedied by manipulations of these parts." No such word as "chiropractic" or "chiropractice" is found in this dictionary. It appears to be a newly coined compound word suggesting hand practice. The state may well require a license for the purpose of regulation, and it may prescribe reasonable qualifications of the licensee having reasonable relation to the business or profession of osteopathy, understanding the latter as above defined. It has also the power to enforce this requirement by fine and imprisonment for practicing without a license. It does not invalidate the statute that it is limited to persons practicing for a fee. That is a legitimate ground of classification.

Liability of Employer for Malpractice of Physician Who Has Become Incompetent

(Guy vs. Lanark Fuel Co. (W. Va.), 79 S. E. R. 941)

The Supreme Court of Appeals of West Virginia affirms an order granting to the defendant company a new trial after the plaintiff had recovered a verdict for $12,500 damages for the alleged malpractice of a physician selected by the company to treat its employees and their families. The plaintiff was the wife of one of the company's employees. She having become ill, the physician was summoned and advised of a fear that it might be an abortion. He, however, merely took her temperature and gave her a few white tablets. He made no examination of her person. On his third visit it was asserted that he was drunk. It was afterwards found that the plaintiff was suffering from an abortion and an infection which necessitated a removal of the ovaries.

The court holds that an employer which employs a physician to treat its employees, and collects small monthly fees from their wages, all of which it turns over to the physician as his compensation, is not liable for the physician's malpractice, unless it was negligent in selecting or retaining him. The defendant was under no legal obligation to provide a physician and surgeon for its employees; but, having assumed to do so, it was bound to exercise reasonable care to select a competent and skillful one. It was not bound to select a physician possessing the highest degree of competency and skill, but only of the average skill of physicians in the locality in which he was to practice.

No more rigid rule is applicable in case of the employment of a physician by a company to treat its servants than is applicable in the case of the employment of fellow servants, and it is well settled in such cases that the employer's duty is not wholly discharged by the exercise of proper care in their selection in the first instance. It is bound to keep itself advised as to their continued fitness, so far as it can be accomplished by proper supervision and superintendence; but the same degree of care to keep itself informed of the continued fitness of its servants is not required of the employer as in the case of their employment.

Having selected a competent physician, the employer may rely on the presumption that his competency will continue until notice of a change. The court cannot say that it was the duty of the defendant to make inquiry of persons in the neighborhood to ascertain if the physician had continued to be a sober man, before it had received any intimation that he was drinking. It was reasonable to suppose that his professional skill would improve with practice, and the law does not recognize such general depravity in mankind as to exact of an employer ceaseless vigilance against its consequences. But evidence of the physician's general reputation for drunkenness in the community in which he practices is admissible as tending to prove that the employer knew, or should have known, of it. Yet, to constitute notice, the reputation must be so general and notorious that ignorance of it shows neglect of the employer's duty. Reputation confined to a small number of its employees is not sufficient. And when the reasons which are relied on to charge the employer with knowledge of the physician's reputation apply with equal force to show knowledge of the employee also, the negligence of the latter in not complaining is as great as that of the former in retaining the physician.

Insanity Assumed to be Hereditary

(Prewitt vs. State (Miss.), 63 So. R. 330)

The Supreme Court of Mississippi says that insanity was the sole defense in this case to a charge of assault and battery with intent to kill. After introducing evidence of the insanity of his father and other blood relatives, the accused asked two of the physicians who testified in the case "whether or not insanity is hereditary and transmissible." The court might very properly have allowed this question to be answered, though its declining so to do did not constitute a reversible error, if error, in fact, at all. That insanity is hereditary, as hereinafter explained, is a matter of common knowledge, and is therefore a fact not necessary to be proved. The court takes judicial notice of it.

The evidence of insanity among his blood relatives, which the accused had already introduced, was admissible solely on the ground that insanity is hereditary. At one time it seems to have been supposed that this fact must be proved in each case before evidence of insanity among blood relatives could be received. But the court ventures to say that no court of to-day would so hold. The fact seems now to be assumed by all of the courts and authorities without question.

To exclude facts from evidence which depend for their value on the law of heredity for the reason that such law has not been proved is, or should be, as shocking to the judicial mind as the exclusion of facts from evidence depending on the law of gravity for the reason that such law has not been proved. Heredity "is a universal law of organic life," and is defined as "that biological law by which all beings endowed with life tend to repeat themselves in their descendants."

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

Am. Assn. of Pathologists and Bacteriologists, Toronto, Apr. 10-11.
American Surgical Association, New York, April 9-11.
Med. Soc. of the State of Cal., Santa Barbara, April 14-16.
Medical Association of Georgia, Atlanta, April 14-16.
Mississippi State Medical Association, Columbus, April 14-16.
Missouri Valley Medical Society, Lincoln, Neb., Mar. 26-27.
South Carolina Medical Association, Florence, April 14-16.
Tennessee State Medical Association, Memphis, April 7-9.

FEDERATION OF STATE MEDICAL EXAMINING BOARDS OF THE UNITED STATES

Second Annual Session, Held at Chicago, Feb. 25, 1914

The President, DR. CHARLES H. COOK, Natick, Mass., in the Chair

Election of Officers

The following officers were elected: president, Dr. Charles H. Cook, Natick, Mass.; vice-president, Dr. T. A. McCann, Dayton, Ohio; secretary-treasurer, Dr. Otto V. Huffman, Albany, N. Y. Chicago was selected as the next place of meeting, in 1915.

Public Health Administration

ASST. SURG.-GEN. W. C. RUCKER, U. S. Public Health Service, Washington, D. C.: Morbidity reports, particularly of the communicable diseases, show the location of cases which constitute foci from which disease may be spread to the well. There is also a humanitarian aspect of the question. The knowledge of the occurrence of disease makes it possible to see that the sick receive proper treatment, not only from a preventive but also from a curative point of view. When physicians fail to report cases of communicable disease, it is because of ignorance, carelessness, or a desire to protect the interests of their patients. They would not be imbued by the latter desire if the general public were in thorough accord with the spirit of preventive medicine. It seems to the practical health administrator that the most important single thing which should be taught in the campaign of public health education which is now going on would be the necessity for making prompt and accurate morbidity reports. In this connection, it may be pointed out that if the measures of quarantine, disinfection and placarding are applied by the health officer with tact and charity, much of the public opposition to reports of sickness would vanish.

Compared with the returns which it brings, that price is not high. As a matter of fact, the dollar which is spent on public health administration is an investment yielding a high rate of return to the public weal. This fact, simple as it seems to those of us who have studied the question closely, has not yet permeated the public mind, and sanitary appropriations are usually dealt out with a parsimonious and begrudging hand. The remedy for this condition of affairs is the education of our citizens to the point where they will appreciate the necessity for public health work. We may lecture to them on the danger of disease, we may instruct them as to the means of its prevention, but we shall never be able to bring them to a realization of the financial side of public health administration until we are able to present an accurate credit-sheet covering our work.

Three things are necessary to efficient public health administration: (1) the man—the well-trained, well-remunerated, full-time health officer; (2) the power—the intelligent, uniform, accurate law, and the adequate appropriation; (3) the knowledge of the location and prevalence of disease, in order that it may be controlled by the cooperative effort of the general public, the medical profession and the public health administrator.

DISCUSSION

DR. JOHN A. WITHERSPOON, Nashville, Tenn.: It is unfortunate that in this country we have never seemingly appreciated the real value of a human life. We have never appreciated that public health is a science and one that must be carried on by our very best men. The science of medicine has developed so thoroughly in the last decade along the lines of preventive medicine that we have broad-gaged scientific men who can handle these problems. The American people must awaken to a realization of the fact that men must be trained for this work, and that politics should not enter into the work of protecting the health of our people any more than it does into our courts.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.: We can say that since the discovery of the tubercle bacillus in 1882, the death-rate from tuberculosis in the United States has been reduced 54 per cent. We can say that in the past ten years 200,000 lives have been saved from death from tuberculosis. Preventive medicine generally measures its success by the number of lives saved. A battle in which 20,000 lives are lost would stir the world at the time, and would fill the pages of the historian of the future. Preventive medicine in this country has averaged 20,000 lives a year saved in the last ten years. The average of human life has been increased nearly four years in the last ten years. The average of human life in the United States to-day is fifty years, and if we were to apply exactly what we know to-day and never learned anything more, the average human life in this country would be increased about fifteen years more. Are there facts more forceful than these and are not the people of the United States sufficiently intelligent to appreciate them? Since I began the practice of medicine, scarlet fever has been reduced in its death-rate from 54 per hundred thousand in the registered area to 6. Diphtheria has been reduced from 117 to 18. Typhoid fever, about which we have been so slow, has been reduced from 34 per hundred thousand to about 16 per hundred thousand. In 1880 only 17 per cent. of the entire population of the United States was included in the registered area, compared with 61 per cent. at present, and we want to make this complete. We want to obtain complete morbidity statistics and show the people their value. I think that the people will be intelligent enough to respond.

Should Not the Federation Adopt a Uniform Minimum Curriculum for Medical Schools?

DR. JOHN L. HEFFRON, Syracuse, N. Y.: The effect of such a curriculum on the medical schools is bad. Conditions are not identical throughout the country. Aside from the universal need of well-equipped physicians to care for the people, there are other and different conditions that are local and should be met. Medical schools differ in equipment and in opportunities for meeting the various demands for medical service. The enforcement of an exacting, all-time-consuming, standardized curriculum must have the effect of reducing all schools to the same dead level and of paralyzing individuality in schools. This is the evil result entailed on us by the praiseworthy effort to effect a reform against medical schools the majority of which were private joint stock corporations at the time when these efforts were begun. In our country it is probable that no better method could have been employed than the enactment in every state of a medical practice act that should protect the people from unworthy medical men and from unworthy methods of medical education.

The conclusion therefore seems inevitable that the imposition by the state or by any other authority whatsoever of a standardized rigid, time-consuming curriculum can work only evil to medical schools and to medical students. We should have a simple, straightforward statement of what are considered fundamental subjects and an outline for each, giving what are recognized as the essential principles to be mastered, and a standard by which to measure knowledge and power. With such a minimum curriculum, each college recognized by a state as worthy could offer electives in various subjects so that every student could pursue a more extended course in the particular subject which commands his greater interest. In such a way the university idea of education could be carried out.

Should the Federation of State Medical Boards of the United States promulgate such a curriculum, and have they the power to administer it? The formulation of any curriculum should be the work of men trained in the science of education. It is purely a pedagogic question. The very terms of the law by which members of the medical examining boards in most of the states are selected makes it impossible for them to be teachers. The purpose of such a law is self evident. It was thus laid down to prevent the imputation of favoritism to a particular school on the part of an examiner who should be a member of the faculty of such a school.

It is my opinion, therefore, that the cause of medical education would be forwarded if this federation should secure the cooperation of specialists in university and in medical education and, with their aid, formulate a uniform minimum curriculum for medical schools to present for adoption to the various states of the Union; and that this great federation should endeavor to secure such an administration as shall really test, by practical examinations, the knowledge of all applicants for the license to practice medicine.

DISCUSSION

DR. JOHN K. SCUDDER, Cincinnati: As this is a voluntary organization I doubt the advisability of your attempting to adopt a uniform curriculum for medical schools. The enforcement would have to lie with the individual boards, and even then within powers written into the various state medical laws. Of one thing I am firmly convinced; that if this curriculum were hard and fast and not flexible, it would defeat the very object desired, the rational education of the student, and would prove a serious detriment to the already burdened college.

The objections now to the standards laid down by the Council on Medical Education are that they are not flexible, and frequently more destructive than constructive. Dr. Heffron has delicately touched on these points, and mentioned the point of hours. The Ohio State Medical Board, on which I had the honor of serving, specified a minimum curriculum of 3,600 hours. New York specifies 3,600 hours, the Association of American Medical Colleges 4,000, but Pennsylvania specifies in the law itself 4,480 hours, and now comes California with the more absurd standard of 4,800. Scarcely a score of colleges even profess to have that amount of teaching, and I seriously doubt the advisability of 4,480 hours. It is alleged that Pennsylvania classes several colleges in List A, which do not by their catalogues schedule any such number of class hours. When I attended the Cincinnati University about twenty-five years ago, we had several courses leading to different degrees, and the flexibility of the course, as I remember it, was approximately as follows: freshman year, four major subjects specified, no options; sophomore years, three majors, one elective; junior year, two majors, two electives; senior year, a little over half elective along certain lines. If a flexible medical curriculum in some such manner as this could be adopted, I should approve the plan. I have more sympathy with the college which successfully teaches medicine than with the one posing for maximum hours. Flexibility is the key-note of my argument, and continuously holding in mind the teaching of medical students to think and not make automatons of them, which is unfortunately the trend of modern education.

DR. J. M. BALDY, Philadelphia: Pennsylvania has no idea of adopting hard-and-fast rules in the administration of the law. The bureau unanimously agrees that flexibility is the proper and only thing, and it is the only way any law can be intelligently enforced.

President's Address

DR. CHARLES H. COOK, Natick, Mass., delivered an address in which he suggested a number of measures which he thought would be useful for the federation to adopt in the conduct of its work.

The Standardization of Medical Education

DR. HAROLD C. ERNST, Cambridge, Mass.: It is unfortunate that the teaching of any important branch of medicine should be under the control of a single person. It is also unfortunate that a young and ambitious worker should have no probable permanent reward held out to him in his own institution—unfortunate for him and unfortunate for the institution. There are many instances of a worker demonstrating his right to professorial rank, in which this rank should be conferred by the authorities of the place in which the worker has developed. When such rank has been conferred, the young professor should find himself among his colleagues, not his superiors. Differences in influence and effectiveness will adjust themselves.

That this position is the just one is seen in the administration of Harvard University, where it has been and is the custom to appoint as many professors—say of English—as occasion seems to require, and where there is never the slightest feeling that the rank of all these professors is not the same. That is the true university policy, and it is the policy on which a medical school must be organized if that organization is to be of a broad and flexible character.

The education of a physician is primarily an educational, not a medical question, just as the training of an engineer is primarily an educational question, not an engineering question. This does not mean that the physician and the engineer must not recognize finally the points of view of medical practice and of engineering practice, respectively, but it does mean that, though the content be in one case medical and in the other technical, the methods employed in training physician and engineer involve educational problems and educational skill.

Paulsen, describing in his book on the German universities the increased importance of the medical profession, reports with some astonishment that the number of physicians has increased with great rapidity, so that now in Germany there is one doctor for every two thousand souls, and in the large cities one for every thousand.

The desire for standardization has extended already to an unfortunate extent in the almost universal demand that a candidate for registration to practice medicine shall be the possessor of the degree of doctor of medicine. This demand ignores the fact that this degree is really of university grade—that it is not a prerequisite to the practice of medicine in the older countries, and that it should not be in this. What the supporters of such a requirement really mean is that the candidate shall have a degree in medicine, which shall be a certificate of having had proper medical training; whether it is a doctorate or not is entirely aside from the question. This is a matter of academic standing pure and simple. Think of a law that would have prevented Sir Joseph Lister from practicing in this country—if he had seen fit to come here—or even from applying for examination for a license to practice!

It is no longer invariably pursued as introductory to a trade, and it even happens that occasional students pursue its mysteries as a part of liberal education, or as introductory to a career of research. From any such point of view, which shows the true university spirit, the demand for a hospital year before conferring the medical degree would be a hardship. For the practice of medicine, the conditions are different, and it may well be that a year in a good hospital should be a prerequisite to a license to practice. How that can be accomplished in Massachusetts, for example, is a matter for wiser heads than mine to determine.

The faculty of medicine to which I have the honor to belong has taken a definite position in the matter. As a result of action elsewhere in regard to a required hospital year before granting the doctor's degree in medicine or a license to practice, a committee of that faculty was appointed to consider the addition of such requirements in our own school. After the consideration of all the facts that could be gathered, this committee reported that such a step was not advisable, a strong determining factor in the formation of this opinion being the rule of some of the most important hospitals that their interns must be graduates in medicine and holders of that degree.

DISCUSSION

DR. ABRAHAM JACOBI, New York: The standard of medical education even now should be raised so that when we send our boys out to practice among the people they will know more than preventive medicine. Not only do the people want to know about preventive medicine, but the individual patient also wants to know what that doctor has done in a similar case. He wants to know whether that or this doctor can cure him or not. This is just as important, from a practical and theoretical point of view, as to consume so much time in talking about preventive medicine which we do not put into practice.

DR. N. P. COLWELL, Chicago: Dr. Ernst refers to the decrease in the number of medical colleges since 1904, the time the Council on Medical Education was organized. This decrease means a distinct advance. Medical education is not being restricted but is being given better. The diminution from 160 down to approximately 100 medical schools has been largely due to the merging of two or more medical colleges in several cities into one stronger and better-equipped school. The decrease in the number of medical colleges has been largely brought about, therefore, through the voluntary action of the colleges themselves.

As to prescription-writing, there has been an effort made to have medical students write prescriptions for individual patients in the dispensary and to discontinue the method formerly largely used of designating certain formulas by number.

The Use of the Government Medical Services in Standardizing Medical Education

LIEUT.-COL. JOHN R. KEAN, Medical Corps U. S. Army: About 1830 there began in the army the system of examinations for admission to the medical service, which has been kept up ever since, and to which, more than to any other agency has been due its efficiency and high professional standing. Examinations for promotion were begun in 1833. Of the details of these early examinations but little is known, but Surg.-Gen. Thomas Lawson in his annual report for 1838 speaks of them as follows:

Year by year, for eighty-two years, with a few exceptions, these boards, composed of the most accomplished members of the corps, have been in operation. Between the end of the Civil War and the year 1910, 2,841 young physicians have appeared before them, of whom 562 are known to have been rejected for physical reasons. Of the remaining 2,279, 613, or nearly 26 per cent. have passed, and seventy-four have failed on their professional examination. I have not been able to ascertain the number examined prior to 1866, but it seems reasonable to guess that the number averaged not less than twenty a year, which would bring the number which appeared before these boards to a total of not less than 3,600.

The first law requiring examinations for admission in the naval medical service was in 1828, and for the Marine-Hospital Service (now the Public Health Service) in 1870.

The need of some central examining board which, while determining the competence to practice of medical graduates, may at the same time set a uniform and reasonably high standard of medical education, and confer the right to practice anywhere in the United States, has long been recognized. It was proposed in an editorial in THE JOURNAL as long ago as Jan. 11, 1902. A little later in the same year, Dr. William L. Rodman proposed such a board to the committee on National Legislation of the American Medical Association, and his report was adopted unanimously by the committee. It was also stated to be acceptable to the representatives of the state boards present at the meeting. At that time, however, the medical services of the Army and Navy did not possess their present organization, an important feature of which lends itself in a valuable way to this scheme.

If, therefore, a board should be appointed by the President of the United States, for the examination of officers for the Medical Reserve Corps, of a composition which would insure a high standard of requirement, and the state boards will agree to accept and license, without examination, the holders of Reserve Corps commissions, as is now done by many states for medical officers of the government services, the thing is accomplished. If the laws of any state do not at present permit of such action on the part of its examining board, it would probably not be very difficult, with the powerful assistance of the American Medical Association, to obtain the authority of law to admit to practice commissioned medical officers of the Reserve Corps.

It would not be necessary to wait for favorable action by every state, for if the scheme be begun by even a few states, the rest could be expected to come into the line as the desirability of the scheme became evident.

It would obviously be desirable that the other medical services of the national government should join the army in a plan of such importance to the profession at large.

The board should have, evidently, official members from the government service or services which will enter into the scheme, not the surgeon-generals, as my friend Dr. Rodman suggested, as these are too deeply immersed in administration duties for such work, but the officers of appropriate age, rank and attainments. I think that the American Medical Association should have a representative, selected perhaps by the Council on Medical Education, and this federation should have a representative. It should have two, if it should be deemed necessary and desirable to give our friends of the homeopathic school representation, and thereby secure a member who could conduct the examination in practice and materia medica for graduates of medical schools of that persuasion.

The details of organization and operation could be perhaps best worked out by the board itself, which could make its reports directly to the president, or to an executive committee, composed of the three surgeon-generals, whose duty it would be to obtain, through the proper channels, the commissions which would be the reward of the successful candidates.

DISCUSSION

DR. DE WITT G. WILCOX, Boston: Any physician who has given even superficial consideration to this subject will agree on the absurdity of using forty or fifty different standards for testing the ability of physicians to practice in the United States and its dependencies. The people of Maine do not require any different therapy from the people of Florida or of California. The difficulty has been to find some method by which one board could agree to pass on all of the graduates in medicine. There are constitutional difficulties in the way of such a national board, and Dr. Kean has brought before us a possible solution in the shape of an optional board which might be created out of the machinery that already exists for such examinations. One weak point in using the machinery that already exists is that the Medical Reserve Corps might give the examinations too much of a military complexion, and the question would be raised as to whether it would be broad enough in scope to examine physicians for general practice.

DR. WILLIAM L. RODMAN, Philadelphia: Inasmuch as the Constitution of the United States has been amended twice recently, it would not be a difficult thing to amend it so as to establish a national examining board, and when a man has passed such a board he should be given a license or diploma which would be broad enough to permit him to practice anywhere in the United States.

What Instruction Ought Medical Colleges to Give in Pharmacology and Therapeutics?

DR. SAMUEL W. LAMBERT, New York: There is a great amount of good in the older materia medica and certainly more good than can be found by the laboratory methods of pharmacology; but there is much that is inert and useless, and it is the duty of the school to select the good from the bad and to limit its teaching to the essential drugs. It should be the duty of an examiner to draw out from the student by presenting theoretical therapeutic problems the first mention of any therapeutic measure, or of any drug, and then to hold that student strictly responsible for an accurate knowledge only of the remedies mentioned and suggested by himself. The same rules can be applied to teaching the newer materia medica. The course of instruction in the laboratory of

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pharmacology should be given by men who have taken the M.D. degree and who have had hospital training in clinical medicine. The course should include a study of the effect of small doses of drugs on animals and also the toxicology of larger doses in the same way. Therapeutics should be considered not as a separate department, but as a part of the department of clinical medicine, and certain instructors should be delegated to present to the fourth-year students serving as clerks, such therapeutic problems as may arise in the course of the ward service.

What Instruction Ought Medical Colleges to Give in Pharmacology and Therapeutics? The Point of View of the State Examiner

DR. WALTER L. BIERRING, Des Moines, Iowa: Considered as an index of the qualifications for medical practice, an examination in pharmacology should constitute one of the best criteria of a candidate's ability logically to apply knowledge acquired in a medical school. Pharmacology presents problems that are partly scientific and partly practical, the former being undoubtedly the effective correlation of pharmacology and therapeutics. As to the latter it must be admitted that pharmacology, or pharmacodynamics of the experimental investigation of the drug action, has played the part of a powerful and predominating useful ferment in therapeutics, which possibly has not yet reached the proper maximum of its usefulness.

Of equal vital influence to the progress of therapeutics is the standardization of drugs, for in this way unity of knowledge is established that forms an important factor in the licensure examination. In fact, no opportunity is to be omitted to emphasize the close relation that should exist between the pharmacist and the physician.

It may not be apparent to all, but there is a distinct difference in the purpose and mental attitude of the examiner and the candidate for a medical degree, and that which exists between these two persons in an examination for a certificate of licensure. The one is largely a test of knowledge of the subject in question, and the other pertains to a logical application of this knowledge in the treatment of disease. The latter injects the human element in that it presumes an experience in the treatment of patients, which unfortunately is not always the case. I am therefore strongly in favor of the additional hospital year of required medical training, and furthermore feel very strongly that the licensure examination should be deferred until this year's practical work has been satisfactorily completed. With this additional experience of closer contact with patients, the candidate will be able to approach the second examination in a much better way.

In the broader use that has been given to the term "pharmacology" there is included practically all non-surgical or non-operative measures in the treatment of disease. From the original drug treatment it has branched out to include chemotherapy, organotherapy, serotherapy, immunotherapy, the application of various forms of physical therapy, and perhaps to all this can properly be added that of psychotherapy.

Keeping in view the real object of the licensure examination to test a candidate's ability for the practice of medicine, less consideration should be given to a knowledge of definition, forms of classification, or of general application of drugs and other remedial agencies, but more to determine his ability properly to apply his knowledge of pharmacology, the purpose to be attained with the different therapeutic measures, and the manner in which their effect is to be interpreted.

The proper application of physical therapy, the underlying principles of chemotherapy, serotherapy and immunotherapy, can readily be incorporated in questions pertaining to applicable disease conditions, thus permitting a wide range in formulating the questions, yet all with some degree of practical aspect, and thus constituting a marked improvement over some of the methods that have prevailed heretofore.

DISCUSSION

DR. BERNARD FANTUS, Chicago: There is need for considerable improvement in prescription-writing. This could be secured if it were realized that prescription-writing cannot be taught by lecturing and demonstrations; that the students must be drilled in prescribing. I believe that the best results can be obtained if a course on pharmacy and prescription-writing be given before the work in pharmacology is taken up. The students should be made familiar in this course with the various classes of pharmaceutical preparations and their prescribing. When the student then enters his course in pharmacology, he is ready to write prescriptions from the very beginning, and he ought to be required to write prescriptions for each of the important drugs as they are studied, paying special attention to methods of pleasant and efficient administration. When the student finally advances to the study of therapeutics he should still be required to write prescriptions now from the point of view of the effect. If the clinical instructors will do their duty and require students to write prescriptions for the remedies needed by the patients treated in hospitals and in dispensaries, the student would leave our medical colleges well trained in prescribing.

[A general discussion followed on a model medical practice act. There was also a general discussion on credentials and the evil of the equivalent. A great many of the members took part in these discussions.]

Reciprocity

DR. J. M. BALDY, Philadelphia: The method we have adopted has been to take each individual school and judge it on its own merits, irrespective of the fact that it is in a bad environment of faulty state legislation or poorly administered state laws. Having passed on the school and found it competent, as judged by the legal standards of Pennsylvania, as well as by the enforcement of its standards and by its finished products, we register that school and are ready to accept its graduates and endorse the license which they have received from any other state in the Union, it matters not what state, provided only that that state will do the same with the graduates of Pennsylvania schools. The Pennsylvania law requires this. We do not even ask that our estimate of Pennsylvania schools be accepted by the other state.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

Meeting held Jan. 20, 1914

(Concluded from page 726)

Early Recognition and Medical Treatment of Gastric and Duodenal Ulcer

DR. WILLIAM VAN VALZAH HAYES: It is of the utmost importance to make the diagnosis at the earliest possible moment, and ascertain what are the factors predisposing to ulcer and correct them before the greater damage is done. Disease of the gall-bladder or bile ducts and chronic appendicitis may closely resemble ulcer and it is common to have these conditions associated. Persistent distress or pain soon after meals, or the same symptoms coming on regularly when free hydrochloric acid begins to appear in the stomach should always arouse the suspicion of ulcer. The same is true of sour belching or burning or gnawing, or if the patient awakens in the morning with gastric distress, which is relieved by taking food or an alkali. Gastric discomfort or pain of a degree to lead the patient to induce vomiting is very frequently due to ulcer.

The time of pain onset is important, though too definite statements regarding it cannot be made. Usually, if the pain comes late in the digestive period, two to four hours after the meal and is relieved by taking food or an alkali, ulcer near the pylorus, on either side, is probable. In many cases the symptoms may be slight, discomfort, belching, moderate prolongation of digestion, hypersecretion and constipation, when the diagnosis must be made by the functional examination, examination of the gastric contents and the stools together with the roentgenographic findings. Occult blood in the gastric contents, or stools, or in both, is highly significant. The thread test properly used is valuable. If the pro-

cedures mentioned are intelligently carried out, the percentage of failures in diagnosis should be small.

In the absence of acute or chronic perforation, repeated hemorrhages, progressive anemia, obstructive conditions, and suspicion of cancer, every case should receive the benefit of at least six months' medical treatment and observation before having recourse to surgery. As a rule, the following principles should be insisted on: Rest in bed for four weeks with freedom from responsibility and care. Rest should be absolute as long as there are any signs of occult blood in the stools. An ice bag should be kept on the epigastrium most of the time if hemorrhage has occurred. Abstinence from food by the stomach is desirable from two to four days if there has been marked hemorrhage or great sensitiveness over the stomach or duodenum, provided the patient is strong enough to justify the partial starvation. During this period rectal alimentation may be employed. Saline solution by means of the Murphy drip may be employed for the first twenty-four hours and then the following enemata: Fully peptonized milk, 4 to 5 ounces; glucose ½ ounce; salt, 10 to 15 grains. Beginning the day after the hemorrhage, the white of an egg in water may be given by the mouth every two hours, or the Lenhertz treatment begun. In general, a diet very low in extractives and moderate in proteids is desirable. Bland fats, such as good olive oil, fresh cream and fresh unsalted butter, diminish the acidity and have high caloric value. Duodenal feeding by a slightly modified Einhorn method has given very satisfactory results. While this form of feeding is still too new to justify over-enthusiastic statements, it seems reasonably certain that it constitutes a valuable addition to the old established methods of treatment, even though its precise field is not yet fully defined. Medicines of value in ulcer are bismuth, magnesium, nitrate of silver, tincture of belladonna, iron, Carlsbad sprudel salts, and liquid paraffin.

DISCUSSION

DR. MAX EINHORN: The application of the tube in gastric ulcer should be performed very carefully. Personally, the use of the stomach bucket seems preferable because there is no effort at all to bring it out. With regard to the thread test, I usually use the bucket, but originally I devised the use of the beads. The great advantage in the use of the bucket is that material can readily be withdrawn from the duodenum. The combined method of thread and bucket may be employed. In most instances, I introduce the bucket by having the patient swallow it, but there are some instances in which this seems difficult. Some patients say they cannot swallow the bucket. Sometimes there is a spasm present, the water enters the stomach, but the bucket remains behind.

DR. EDWARD WALLACE LEE: More attention should be paid to the study of stomach conditions, especially to physical examinations; ulcerative tendency could then be recognized and even prevented. Dyspepsia is too often treated without looking for the cause.

DR. BENNETT SHELDON BEACH: The thread test is extremely useful. It should precede the use of stomach tubes and other methods. The test for occult blood should be made before examinations which may be of a traumatic nature. It is dangerous to aspirate by means of the bulb, and one should be careful in withdrawing it, lest he may cause erosions.

Aim and Scope of the Psychopathic Clinic in Connection with the New York Public Schools

DR. L. PIERCE CLARK: For years the psychiatrist, neuriatrist and educator have demanded more knowledge of the innate trends of manner, conduct and temperament of normal and abnormal child life. The school is the proper place for such studies, and all public schools in the large cities should have a department for the clinical study of the frank nervous and mental disorders of children. The schools are in close touch with child life and with the home. The school has the training equipment, the personnel and the financial support to adequately meet the issues concerned. When properly equipped and organized for the work, it can make clear the nature and degree of retardation and perversion of mental development of the child. The schools should call to their aid experienced physicians, sociologists, psychologists, and educators to unravel this intricate problem of child study. We must study the beginning of mental disorder in order that the best means of preventing the nervous and psychotic disorders of adult life may be forthcoming.

In accordance with these ideas, a group of us last October induced the Board of Education to form such a clinic under the direction of the Bureau of Ungraded Classes, since which date, two experienced neuriatrists and psychiatrists, and four social workers have been employed, analyzing the three thousand children in the two hundred special classes for the mentally defective, and more of such workers are being added as the organization progresses. One of the consulting staff is in charge of the central clinic at the Board of Education every afternoon to examine in minutest detail the more difficult or borderline cases. The board hopes soon to have an observation school and a resident school for more prolonged and special treatment of the most stubborn cases. Careful case records are being kept and in time scientific and public information will be given out. The idiot and imbecile group will be forwarded to state institutional care as rapidly as provision can be arranged for them in colonies. By doing so the school will give its greatest attention and study to the moron, the neurotic, and the delinquent child.

DISCUSSION

DR. AUGUST HOCH: For years I have been interested in the study of the personality that comes to the patient after a break-down; it is especially interesting to learn what kind of people they are, and what traits they possessed that made them go in the wrong direction. Most of these cases come too late for any sort of adjustment. There is an increasing appreciation of the importance of constitutional disorders in psychosis, as well as in neurosis. The early beginnings in these cases are what is interesting.

DR. FOSTER KENNEDY: A few years ago the neuriatrist was directing his energies to solving the problems and questions of structure which are mainly mechanical. There has been a reversion from that point of view and now we study the human being as a psychic. From the trends we are following now it is possible that we will free ourselves from such catch-words as "hypnotic suggestion," "neurasthenia," etc. The study of the psychopathic child will enable us to differentiate the neurasthenic types; the defective children would resolve themselves into several groups and it would then be possible to apply the proper remedy. In children who are defective in their motorium, it would be possible to prescribe one kind of education and in other defects a different kind of training.

DR. L. PIERCE CLARK: There are types of temperament back of the precocious emotions in the infantile life in ticeurs and the disturbance of the ambivalency of equality of emotional attachment to each parent is in greater part due to the inheritance of a certain type of temperament, which, because of its strong determination to the hate polarity, makes one believe that it is really atavistic in component. It seems to be a predominant trait that many such individuals have inherited, but which fortunately is eliminated in most individuals. The whole conception of the tics as I have presented it, may be differently formulated in the future, but I am confident that the essential foundation of the concept will remain.

Women and Patent Medicines.—Women are by nature credulous, an excellent provision provided they do not fall into the hands of the unscrupulous, who trade on their credulity. The true quack is always unscrupulous. It is part of the definition of him. Therefore in all matters of private health, let my readers carefully avoid quacks and advertised remedies. The benefit that these remedies effect is nearly always strictly limited to the dispensers of them. The patient, if really ill, merely postpones the doctor's visit, and, if only temporarily indisposed, will get well without quacks.—Wrench: The Healthy Marriage.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

February, LXIX, No. 434, pp. 265-408

1 *Roentgen Rays, Radium and Mesothorium in Treatment of Uterine Fibroids and Malignant Tumors. Krönig.
2 Umbilical Structures of New-Born. A. W. Meyer, Palo Alto, Cal.
3 Pituitary Extract in Obstetrics. H. E. Lindeman, New York.
4 *Diagnosis and Treatment of Puerperal Insanity. R. R. Huggins, Pittsburgh.
5 Surgical Shock as Factor in Obstetrical Operations. A. L. McDonald, Duluth, Minn.
6 Ideal Obstetric Out-Patient Clinic. F. S. Newell, Boston.
7 Clinical Aspects of Ruptured Tubal Pregnancy. R. Y. Sullivan, Washington, D. C.
8 Diphtheritic Vaginitis. A. L. Goodman, New York.
9 Later Operative Technic in Treatment of Cancer, with Special Reference to Cancer of Breast and Uterus. M. I. Rosenthal, Ft. Wayne, Ind.
10 Relationship Existing between Mechanism and Management of Third Stage of Labor. J. R. Freeband, Pittsburgh.
11 Problem of Major Pelvic Hernia in Female. F. D. Gray, Jersey City, N. J.
12 *Blocking the Sympathetic to Prevent Shock in Combined Operation for Cancer of Rectum or Recto-Sigmoidal Juncture. J. M. Lynch, New York.
13 Pubiotomy Versus Cesarean Section in Neglected Cases. A. J. Rongy, New York.
14 Uterine Hemorrhage Associated with Hypertrophy and Sclerosis of Uterine Vessels. L. W. Smith, Pittsburgh.
15 Prenatal Care. H. Schwarz, St. Louis.
16 Toxic Action of Pituitary Extract on Newborn, Apparently Through Its Mother's Milk. H. B. Sheffield, New York.
17 Anatomy of Female Pelvis and Its Bearing on Procidentia. D. Hadden, Oakland, Cal.

1. **Roentgen Rays.**—The following *resumé* is given by Krönig of his observations: In deeply seated carcinomas with metastases we are, in our experience, still as much in the dark as we were before, in spite of Roentgen-ray and mesothorium treatment. In cases of carcinomas which have advanced beyond the primary focus and which have spread into neighboring connective and glandular tissue, cases which may in general be considered to be inoperable, we may consider a small percentage to be cured. In the operable carcinomas the results are still the most favorable. But here too we must deplore the short time during which the cases have been under observation. The longest observed case in our series was that of a large carcinoma of the abdominal wall, and even that only dates back two years. We must, therefore, not expect too much of Roentgen-ray and mesothorium treatment in malignant tumors. If however, a relatively large percentage of operable cases remain permanently cured the success of the treatment would still be sufficiently great, for we know that especially in operations for carcinoma of the genital organs we find a high mortality rate amounting in the case of operation for carcinoma of the cervix even to 25 per cent.

4. **Treatment of Puerperal Insanity.**—That the treatment should be directed toward prevention is the point made by Huggins. The first step is to remember the possibility of this complication in a woman having an unstable mental organization. One cannot hope to anticipate the development of an attack of puerperal insanity in every instance; but the family history, careful study of the previous history of the patient, will often give a clue which should lead to cautious treatment. Careful observation and treatment may lead to results just as valuable in preventing nervous disturbances not accompanied by loss of reason. In all women who manifest unusual nervous symptoms during pregnancy, rest, absolute rest, is the treatment *par excellence*. This is indicated in the presence of so-called hyperthyroidism especially. Elimination should be kept at the highest possible standard throughout pregnancy. If a patient gives a history of previous attacks either during pregnancy, or at other times, the advisability of a continuation of the pregnancy must depend on the severity of symptoms during the attack and the general condition of the patient at the time. If there has been one severe attack, the patient should not be allowed to become pregnant the second time. If this occurs, Huggins believes the uterus should be emptied as soon as any sign of extreme nervousness begins which does not respond to elimination and absolute rest. It will not often be necessary, but it offers one of the best indications for the termination of pregnancy. A woman having had one severe attack with recovery should have the privilege of sterilization by the removal of the fallopian tubes. In the milder forms, where the symptoms have not been severe, careful treatment will prevent the development of more serious conditions.

12. **Blocking the Sympathetic.**—The patient, after having been prepared for operation in the usual manner, is given ¼ grain morphin and $\frac{1}{200}$ grain hyoscin unless for some reason this is contra-indicated, and is then placed in the left Sims position. The safest method to adopt, especially by those who are not familiar with this procedure, is to make an incision a little in front of the sacrococcygeal joint, and, if necessary, extend it until an opening is found. This can be done under local anesthesia. The point at which the needle is to be inserted is first decided on. This can be determined by following the sacral spinous processes until they are found lacking. Slightly above this point will be found the opening of the canal. If, as happens in most cases, there is a bifid spine, the ridges can easily be felt, except in very fat subjects. If the canal opens near the sacrococcygeal joint this point is selected. Under local anesthesia the needle is inserted in the median line, at an angle of about 15 degrees until the bone is reached. It is then passed close to the bone until it has been entirely inserted for about 1 inch. When the needle is found to be in the canal, about 4 c.c. of the same solution is deposited on each side. After this has been done the trocar is reinserted in order to prevent the escape of fluid, and the needle, with the trocar, allowed to remain in position until anesthesia is established. The reason for this is because if the anesthesia is not established after fifteen minutes, it may be necessary to inject 1 or 2 c.c. more, and this is made much simpler if the needle has been left in place. It is important for the fluid to be absolutely sterile and freshly prepared; also of the same specific gravity as the blood in order that it may be readily absorbed. After this has been accomplished, the patient is placed in the lithotomy position, and the abdomen painted with tincture of iodin, this afterward being washed off with alcohol. The abdomen is then opened. The next step is to block off all the sympathetic nerves within the triangular space bounded by the common iliac. The technic is as follows: An incision is made in the mesentery on one side at the apex of the common iliac arteries, slightly above the bifurcation of the aorta. The needle is passed in through this incision, and all the space between these arteries is infiltrated with a solution of 1 per cent. novocain. If necessary, the inferior mesenteric plexus can also be treated in the same manner. After this has been accomplished, the sympathetic nervous system of the entire hypogastric plexus is blocked. By means of a scissors curved on the flat, the mesosigmoid is slit as far down as the bladder, or uterus, as the case may be, and continued around on the anterior surface of the rectum to the other side, thus separating the rectum from the bladder or uterus. When this has been done, the sigmoidal artery is double tied close to its root. Afterward, the superior hemorrhoidal artery is double tied, and with a scissors curved on the flat, scoop out all the fat and glands between the folds of the proximal mesosigmoid—from the promontory of the sacrum to the levator ani muscle. After the middle hemorrhoidal artery has been clamped, both leaves of the mesentery are cut, down to the levator ani muscle. The rectum can now be readily separated from the prostate and urethra as far down as the levator ani muscle. The tumor and sigmoid are then packed down in the pelvis, and the peritoneum dissected up from the side of the pelvis and attached to the intestines, thus making a new diaphragm about 2 inches higher than the former peritoneal attachment. All raw surfaces are covered by attaching the peritoneum to the gut, either by a continuous catgut suture, or by several interrupted sutures, and the abdomen closed in the usual manner. The operation is finished from below.

American Journal of Public Health, Boston

January, IV, No. 1, pp. 1-90

18 Insurance Companies and Public Health Activities. L. K. Frankel, Colorado Springs, Colo.
19 *Why Are Modern Infectious Diseases Mild? H. W. Hill, London, Ont.
20 *Present Status of Pasteurization. S. H. Ayers, Colorado Springs, Colo.
21 What Good Housing Means. J. Ihlder, Colorado Springs, Colo.
22 *Drug Addictions, a Public Health Problem. C. E. Terry, Jacksonville, Fla.
23 Disposal of Manure. P. M. Hall, Minneapolis, Minn.
24 Control of Communicable Diseases. P. S. Schenck, Norfolk, Va.
25 Dirt Sediment Testing—Factor in Obtaining Clean Milk. M. C. Schroeder, New York.
26 Modern Health Administration: An Analysis. O. Dowling, Shreveport, La.
27 Counting of Bacteria on Surfaces A. Gehrmann, Chicago.

19. **Why Are Modern Infectious Diseases Mild?**—The mildness of modern infectious diseases is believed by Hill to be due to the lessened virulence, smaller stock and reduced distribution of the streptococci and staphylococci formerly bred in hospitals. He urges that public health men should campaign for medical asepsis as the surgeons did formerly for surgical asepsis; and not only in contagious hospitals, handling the specific infections, but also wherever septic cases are cared for.

20. **Present Status of Pasteurization.**—Regulations relating to pasteurized milk, Ayers says, should be based only on accurate scientific data. It is often the practice to demand a bacterial reduction of 99 per cent. during pasteurization. It is an easy matter to destroy 99 per cent. of the bacteria in milk when the raw milk contains large numbers. It is often impossible, however, when raw milk contains around 100,000 bacteria per cubic centimeter to destroy 99 per cent. on account of heat-resistant bacteria which are not necessarily spore formers. In a large number of experiments in which Ayers pasteurized milk under exact laboratory conditions, where no reinfection was possible, in one sample only 17 per cent. of the bacteria were destroyed. He states that often 99 per cent. of the bacteria may be destroyed and yet the pasteurized milk may still contain hundreds of thousands, while in other cases in which the milk contains only tens of thousands the percentage reduction may only have been from 80 to 90 per cent. In the control of pasteurization it is essential that the proper temperature be used and that the process is so performed that no reinfection takes place. This can only be accomplished by direct supervision of milk plants by trained men who have authority to carry on such supervision. It is not the idea even of the most ardent exponents of pasteurization that any grade of milk should be pasteurized and consumed and that farm inspection can be eliminated. Filthy milk is not fit for human food under any condition and need not be tolerated. Ayers emphasizes that in the present status of pasteurization the ideal to be achieved is to use the process not to make a dirty milk a clean milk but to make a clean milk a safe milk.

22. **Drug Addictions.**—The points Terry makes are, first, the necessity of securing accurate data in each community as to the prevalence of drug habits. The only persons who really know them are the druggists who cater to this trade and the users themselves. Obviously neither party will supply the information unbidden. A survey of the true conditions should be conducted and the findings made a matter of public record and information. Not improbably some better method than Terry's will be devised; one less burdensome is certainly desirable in large communities. Second, whatever corrective legislation be enacted must take full cognizance of the practicing physician as a factor of prime importance in the formation of drug users and not content itself with restrictions thrown around the druggist. Third, any effective prohibitive legislation must provide for the tree treatment of existing users. To deprive them of their supply alone would be inhuman; private institutional treatment is beyond the reach of all but comparatively few, a circumstance probably more fortunate than otherwise, in view of the methods of most such places, and they should be considered a public charge for at least one rational course of treatment.

Archives of Internal Medicine, Chicago

February, XIII, No. 2, pp. 177-348

28 *Circulation in Man: Blood-Flow in Hands and Feet in Certain Diseased Conditions of Blood-Vessels or of Their Venous Mechanism. G. N. Stewart, Cleveland.
29 *Chronic Gastric Ulcer and Its Relation to Gastric Carcinoma. W. C. MacCarty and A. C. Broders, Rochester, Minn.
30 *Non-Protein Nitrogenous Constituents of Blood in Chronic Vascular Nephritis (Arteriosclerosis) as Influenced by Level of Protein Metabolism. O. Folin, W. Denis and M. Seymour, Boston.
31 *Urobilin: Its Clinical Significance. R. L. Wilbur and T. Addis, San Francisco.
32 *Effect of Heat on Blood-Pressure. L. H. Newburgh and C. H. Lawrence, Boston.
33 *Paroxysmal Auricular Fibrillation. G. C. Robinson, St. Louis.
34 Mutual Action of Certain Digestive Ferments. J. H. Long and G. W. Muhleman, Chicago.

28. **Blood-Flow in Hands and Feet.**—In cases with marked arteriosclerosis Stewart found that the blood-flow in the hands is smaller and the contralateral vasomotor reflexes less pronounced than normal. In cases of thoracic aneurysm the flow in the hands may be normal. Where it is subnormal there is no evidence, apart from a unilateral deficiency in some cases due to the pressure of the aneurysm, that the existence of the aneurysm as such has any influence in diminishing the flow, the diminished flow being associated with coexisting pathologic conditions (myocardial changes, valvular lesions). A great difference in the form of the pulse-wave in the two radials associated with thoracic aneurysm does not necessarily indicate a difference in the flow through the hands. The hand flows may be identical when the sphygmograms from the radials on the two sides are very different. In three cases of Raynaud's disease the hand flows were subnormal even in the absence of an actual attack, in the more advanced cases very much below the normal. An abnormally great contralateral reflex vasoconstriction to cold seems to characterize the earlier stages of Raynaud's malady. When it has existed for a long time and gangrene has occurred, the vasomotor reactions indicate the existence of anatomic changes in the vessels, which do not permit vasomotor reflexes as intense as at first.

29. **Chronic Gastric Ulcer.**—Of 684 specimens studied by McCarty and Broders and which were either excised or resected from the stomach, 191 were chronic ulcers or ulcers in which no histologic evidence of carcinoma was present. There were 472 specimens which presented the characteristics of simple ulcer plus the presence of carcinoma and twenty-one specimens of ulcer in which the presence of cancer was doubtful. Some of the authors' conclusions are as follows: Single and multiple chronic ulcerations occur in the stomach. They vary widely in size. The characteristics of simple chronic gastric ulcers consist of excavations in the wall of the stomach, and these excavations may have the mucosa, muscularis mucosae, submucosa, musculature, subserosa or perigastric structures for their bases, depending on their depth. The excavations may be wide and shallow or narrow and deep. The mucosa of the borders of gastric ulcers may gradually recede from the base or overhang the base. The epithelium of the mucosa, which is the most natural source of carcinoma, may be normal (differentiated), hyperplastic (partially differentiated) or irregularly hyperplastic and migratory (extra glandular or in the stroma). The bases of chronic gastric ulcers consist of scar tissue which radiates usually from the center of the ulcer or is perpendicular to the plane of the coats of the stomach. Usually the surface of the base is composed of necrotic tissue which is infiltrated with lymphocytes. Carcinomatous cells occur in the lower parts of the mucosa and in the immediate submucosa without their being present in the base.

30. **Non-Protein Nitrogenous Constituents of Blood in Chronic Vascular Nephritis.**—The chief purpose of this investigation was to determine the extent to which it is possible by means of diet to vary, particularly to reduce, the waste nitrogen in the blood of such nephritis and incidentally determine whether there is any relationship between the blood-pressure and the accumulations of nitrogenous waste products in the blood. The subjects of these experiments were inmates of an institution maintained for the accommodation of indigent individuals. They were selected mainly on the basis of

abnormally high blood-pressures, and were removed from the institute and placed in a special ward. It would seem from the results as though the direct determination of the non-protein nitrogen (and urea) in the blood furnishes a more reliable guide to what might be called the protein tolerance of patients than can be obtained from any "direct" test of kidney efficiency, for of all tests yet devised for this purpose the phenolsulphonephthalein test is admittedly the best.

31. **Urobilin.**—The intestinal formation of urobilin from the decomposition of bile present within the bowel is held by Wilbur and Addis to be the usual mode of origin. In complete closure of the common duct due to carcinoma, for instance, there is usually absence of urobilin from the urine, bile and stools. There is evidence that the diseased liver may originate urobilin either directly as a product of its cells, or indirectly from decomposition of bilirubin within the bile passages. Thus, patients in whom no bile is reaching the intestine, may nevertheless show urobilin in large amount in the bile, and to some extent even in the urine and stools if the liver itself is diseased or functionally deficient. The urobilin in the urine and stools of such cases must be due to excretion from the blood of urobilin absorbed from the liver. Under abnormal conditions in the liver, formation of bilirubin from the absorbed urobilin from the intestine may fail, and further there may be a reduction of bilirubin to urobilin in the liver itself, a reversal of the normal process. Under these circumstances, the accumulated urobilin in the liver will be absorbed by the blood-stream and excreted in the urine.

An increased quantity of urobilin in the stools indicates increased blood destruction, and there is a close association between increase of urobilin in the urine and disturbance of liver function. Urobilinuria is of marked value as evidence of a definite pathologic change in the enlarged liver of alcoholic persons and occurs almost constantly in the hypertrophic stage of hepatic cirrhosis. Estimations of urobilin in the urine are of value in judging the amount of damage done to the liver parenchyma by chronic passive congestion. Hence, a marked increase of it is of ominous prognostic significance in cardiac decompensation. Urobilinuria is absent or insignificant in cases of obstructive jaundice. The great increase of urobilin in the stools and the urobilinuria which occurs in severe cases of malaria is of diagnostic importance in obscure febrile conditions. By means of urobilin estimations in the stools and urine, those forms of anemia associated with an increased blood destruction may be differentiated. A slight increase of urobilin with additional amounts at the time of resolution does not indicate a severe damage of the liver parenchyma in this disease. It is probably due to a clogging of the liver with the products of resolution and absorbed hemoglobin from the affected lung. Except in those cases in which there is practically a complete disappearance of urobilin from the excretions, due to an obstruction of the common duct from carcinoma, the authors have not found its estimation in carcinomatous cases to be of evident clinical value.

In infectious processes causing parenchymatous changes in the liver or accompanied by hemolysis, urobilin estimations are of definite value in estimating both of these factors in any given case. The majority of measles cases present urobilinuria in excess, but, as might be expected, the amount is less and the duration shorter than in scarlet fever with its more definite damage to the hepatic cells. Marked urobilinuria is indicative of pathologic change in the liver in the stasis of decompensation. Severe nephritis of various types, even in the presence of increased production of urobilin, may prevent definite urobilinuria. Large amounts of urobilin in the urine may be taken as indirect evidence of a certain degree of efficiency in the renal epithelium.

32. **Effect of Heat on Blood-Pressure.**—The effect of increased body temperature, in the absence of infection, was studied by Newburgh and Lawrence in order that its importance as a factor in causing the lowered blood-pressure of infection might be determined. They found that in lower animals degrees of hyperthermia not greater than those encountered in infections are sufficient to cause marked hypotension. The increased body temperature of infection is a potent factor in the production of the lowered blood-pressure which occurs in such conditions. The hyperthermia may be the entire cause of such hypotension.

33. **Paroxysmal Auricular Fibrillation.**—A case is reported by Robinson in which transient attacks of auricular fibrillation were observed and recorded by electrocardiograms. These attacks had apparently occurred over a period of twelve years, and auricular fibrillation became permanent while under observation. No definite cause could be discovered as initiating the attacks. No definite relation could be established between changes in blood-pressure, which was always abnormally high and variable, and the changes in the cardiac mechanism. The heart was strikingly susceptible to pressure over each vagus nerve, both during fibrillation and during the normal cardiac activity. This abnormality may be another expression of the changes causing auricular fibrillation. Electrocardiographic records of these vagus effects were obtained.

The heart of the patient gave no signs of an anatomic lesion, but arterial sclerosis, a frequent accompaniment of auricular fibrillation, was present. The presence of this lesion and the high, inconstant blood-pressure suggest the possibility that changes in the cardiac blood-supply may have been the underlying causative factor in this case. Other cases showing attacks of auricular fibrillation occurring over a period of years have been reported in which high blood-pressure and arterial sclerosis were prominent features. These cases seem closely allied to paroxysmal tachycardia, and although the auricular fibrillation tends to become permanent, the prognosis for them is not necessarily so grave as that which is given in ordinary cases of auricular fibrillation with outspoken cardiac lesions.

Boston Medical and Surgical Journal

February 12, CLXX, No. 7, pp. 221-260

35 *Peptic Ulcers. C. Graham, Rochester, Minn.
36 Certain Phases of Psychoneuroses and Their Possible Trend. G. L. Walton, Boston.
37 Suggestive Treatment in Diseases of Childhood. W. W. Howell, Boston.
38 *Leprosy; Pulse as Possible Indicator of Progress of Disease. J. A. Honeij, Penikese, Mass.
39 Ideal Stasis. H. W. Baker and D. V. Baker, Boston.

35. **Peptic Ulcers.**—Of all the patients with ulcer operated on in the Mayo Clinic and analyzed by Graham, during the years 1906-1911 inclusive, 76 per cent. were males and 24 per cent. were females. Of the males 70 per cent. of all ulcers were duodenal or involved the duodenum. Of the females, 60 per cent. of all ulcers were duodenal or involved it.

Out of a total of 567 cases of duodenal ulcer operated on during a period of six years (1906 to 1911), information has been received concerning 438. The classified results of these data are as follows: 307 or 70 per cent. cured, 79 or 18 per cent. much improved, 40 or 9 per cent. fair, and 12 or 3 per cent. unimproved. A percentage therefore of 88 were cured or much improved. In 440 of the cases, the ulcer was confined to the duodenum. Of these 337 were heard from: 70 per cent. were cured, 16 per cent. much improved, 11 per cent. fair, and 3 per cent. not improved. In the remaining 127 cases, the ulcer extended to or involved the pylorus, and of these 72 per cent. were cured, 24 per cent. much improved, 3 per cent. fair, and 1 per cent. unimproved. That is, 86 per cent. of the former were cured or had made satisfactory improvement, whereas, in the latter group, in which the lesion was more extensive, 96 per cent. were cured or much improved. There were 249 cases of gastric ulcer and reports were received from 162. These were grouped according to their situation: (1) 52 in or at the pylorus (pyloric ulcer), and (2) 197 in other parts of the stomach (principally the lesser curvature). Taken collectively, 95 or 59 per cent. of this series were cured, 35 or 22 per cent. were much improved, 21 or 13 per cent. fair improvement and 11 or 7 per cent. unimproved. Therefore, 80 per cent. were either cured or much improved, 93 per cent. were benefited and 7 per cent. not improved.

Pyloric obstruction to a variable degree occurred in 198 or 34 per cent. of the 576 cases of duodenal ulcer. Gastric analyses showed food remnants in varying amounts after 12 hours in 100 cases or 50 per cent. Reports were received from 163 patients. Nine had died since the operation. Ninety-four per cent. of the remainder were cured or greatly improved.

In 197 of the cases of gastric ulcer, obstruction was present in 78, or 39 per cent. Food remnants were noted in 58, or 74 per cent. Thirteen patients had died since operation. Ninety-two per cent. of the remainder were cured or greatly improved.

In the series of duodenal ulcers, 106, or 19 per cent. of patients gave a history of hemorrhage preceding operation. Thirty-one patients had hemorrhage of variable degree following the operation, but only 18 of these had hemorrhage prior to operation. Therefore there was hemorrhage in 13 cases following operation in which there was no history of pre-operative bleeding. In these the hemorrhage occurred some time after operation and was severe in only a small percentage. Out of a total of 108 patients, 94, or 88 per cent., had a gastrojejunostomy performed, only 4 per cent. had excision or infolding of the ulcer in addition to gastrojejunostomy. Excision or pyloroplasty was done in 8 cases, or 8 per cent. Three of the patients had postoperative hemorrhage in which excision or infolding had been done. Forty-eight, or 23 per cent. of patients with gastric ulcer had hemorrhage prior to operation. Eight patients, or 13 per cent., had postoperative hemorrhage and of this group only three gave a history of hemorrhage prior to operation. Thus in 5 instances there was bleeding in varying amounts following operation in which there was no pre-operative history of hemorrhage. Gastrojejunostomy was the operation of choice in 48 per cent. and excision or infolding of the ulcer in 80 per cent. Excision alone, pyloroplasty or resection with or without gastrojejunostomy, was the operation of choice in 48 per cent. Gastrojejunostomy alone was effective in preventing recurrence of all cases which gave a history of hemorrhage prior to operation. The coexistence of disease in the appendix (16 per cent.) or gall-bladder (7 per cent.) was noted and corrected in 11 per cent. of all cases of duodenal ulcer. In the group of gastric ulcers coincident disease of the appendix (14 per cent.) or gall-bladder (5 per cent.) was present in 9 per cent. In a considerable number of cases, operation was necessary on both organs in addition to the ulcer, with favorable end-results.

38. **Leprosy.**—In the morning the pulse-rate is higher than at evening; often markedly so. That this condition is not due to the greater morning activity of the patient or to atmospheric changes has already been determined by Honeij. Great care has been taken in the making of these records, and as far as possible, surrounding conditions were alike (morning and evening): An enforced rest of half an hour previous to taking the pulse and various precautions were observed and controls made to exclude errors. To exclude thermometer faults, all thermometers were compared and adjusted. The patients were at all times under the supervision of a nurse.

This clinical observation was carried out with sixteen patients, during the year 1913. This heretofore undescribed phenomenon occurs in the majority of cases, and especially in those patients who are in an advanced, active stage of the disease. The same condition is present during febrile disturbances. Honeij considers the change in morning pulse-rate as an index to the condition of the patient. In analyzing the result of this work and the frequency of the occurrence of this phenomenon for five months, the following facts have been obtained by Honeij: In the six patients who present this change in more than three-fourths of the time noted, one has died, four are in the most advanced stages, and one is an exception, being an anesthetic case. Three cases demonstrate the change noted in more than one-half of this period. In the second of these patients there is a marked increase agreeing with the general condition, during the last three months and in the third during the last two months. In the other case there is a marked decrease in the last two months agreeing most strikingly with the recovery of the patient from a prolonged and serious condition. Three cases show this change during more than one-fourth of the time, and in two of these cases there is still greater increase during October and November. Clinically these patients are in an advanced stage. Four cases, all in the early or less serious stage of the disease gave negative results during July, August, September, and with one exception during October and November.

California State Journal of Medicine, San Francisco

February, XII, No. 2, pp. 45-86

40 Plea for Immediate Operation of Fractures. C. G. Levison, San Francisco.
41 Bernard Treatment of Poliomyelitis. D. H. Moulton, Chico.
42 Surgical Complications, Treatment and Preventions. C. P. Thomas, Los Angeles.
43 Congenital Dislocation of Hip and Extensive Skeletal Tuberculosis. H. M. Sherman, San Francisco.
44 Epidemiology and Control of Hydrophobia. W. A. Sawyer, San Francisco.
45 Positive Reading Manometer for Therapeutic Pneumothorax. E. Von Adelung, Oakland.

Cleveland Medical Journal

February, XIII, No. 2, pp. 81-140

46 *Repeated Cesarean Section. A. B. Davis, New York.
47 Treatment of Carcinoma of Female Genitals with Mesothorium. J. J. Thomas, Cleveland.
48 *Pain Distribution in Diaphragmatic Pleurisy. R. Dexter, Cleveland.

46. **Repeated Cesarean Section.**—Davis has performed repeated cesarean operations in thirty-three cases. Twenty-two the second time, eight the third time and in one case each, the third, fourth, fifth and sixth time. Contracted pelvis in some form was the indication for the operation in each case. The uterine scar was strong and firm in twenty-three cases. In four cases it could not be found. In three cases it was thinned in places and of irregular thickness. There was partial rupture of the scar in two cases. In one of these two the rupture extended downward to the left, lacerating through the thinned out lower uterine segment. This patient was sterilized. Both mothers and their infants made good recovery. The third patient was brought to the hospital in a condition of severe shock, with child, placenta and much blood free in the abdominal cavity and the uterus ruptured throughout the entire length of the former cesarean wound. The child was dead and the mother died in twelve hours after a quick operation repairing the rupture. Attention is called to the fact that all three of these patients had been in active labor for many hours before coming to the hospital. Early cesarean section at or just before the onset of labor would have prevented these uterine ruptures.

48. **Pain Distribution in Diaphragmatic Pleurisy.**—While the majority of the cases of diaphragmatic pleurisy will, in all probability, be associated with involvement of the base of the lung, Dexter claims that there are a certain number in which no such involvement can be demonstrated. In these cases the distribution of the pain toward the abdomen may lead to a diagnosis of an acute condition in the upper abdomen. It is in this class of cases that the recognition of pain and tenderness in the neck region will materially help in the differential diagnosis. With inflammation of the central portion of the diaphragm, one may expect the pain to be referred to the region of the neck, while if the outer edge of the diaphragm be irritated the pain will be referred along the dorsal segments to the abdomen.

Iowa State Medical Society Journal, Clinton

February, III, No. 8, pp. 467-546

49 Brain Injury, Its Results. G. Kessel, Cresco.
50 Glaucoma. W. W. Pearson, Des Moines.
51 Care and Treatment of Tubercular Insane. R. J. Russell, Cherokee.
52 Transverse Abdominal Incision for Pelvic Surgery in Female. J. G. Davis, Des Moines.
53 Newer Treatment of Fractures. W. W. Bowen, Ft. Dodge.
54 Physical Defects of Mentally Deficient. F. P. Lierle, Marshalltown.
55 Electrical Treatment of Female Pelvic Diseases. G. H. Cutler, Cedar Falls.
56 Epilepsy. W. A. Bryan, Cherokee.
57 Treatment of Dacryocystitis. F. W. Dean, Council Bluffs.
58 Anesthetics, Anesthesia and the Anesthetist. G. T. McCauliff, Webster City.

Journal of Outdoor Life, New York

February, XI, No. 2, pp. 33-63

59 Food and Tuberculosis. F. H. Heise, Trudeau, N. Y.
60 Baths and Disease: Problem in Rural Districts. D. B. Armstrong, New York.
61 Hints and Helps for Tuberculosis Patients. C. L. Minor, Asheville, N. C.

The Lancet-Clinic, Cincinnati

February 14, CXI, No. 7, pp. 190-206

62 Clinical Examination of Feces. C. L. Overlander, Boston.
63 Endocarditis with Special Reference to Its Etiology as Shown by Specimens. R. H. Babcock, Chicago.
64 Functional Testing of Cardiac Powers. C. S. Williamson, Chicago.

Laryngoscope, St. Louis

January, XXIV, No. 1, pp. 1-80

65 *Case of Purpura Hemorrhagica. M. A. Goldstein, St. Louis.
66 Some Serious Eye Conditions the Result of Intranasal and Nasal Accessory Sinus Disease. J. A. Stucky, Lexington, Ky.
67 Brain Infection from Sinus Disease. W. Freudenthal, New York.
68 Hypertrophied Tonsils Interfering with Action of Palate and Causing Defective Speech. G. Hudson-Makuen, Philadelphia.
69 Acute Phlegmonous Epiglottiditis. M. D. Lederman, New York.
70 Use of Electro-Magnets in Extraction of Metallic Bodies from Trachea and Bronchi, with Report of Cases. S. Iglauer, Cincinnati.
71 Violet Ray and Ozone of Use in Nose, Throat and Ear Conditions. K. W. Baldwin, Philadelphia.
72 Skull of Aborigines: Specimen of Temporal Bone. T. J. Harris, New York.
73 Brain Explorer and Two Modifications of Allport's Speculum. H. Gifford, Omaha, Neb.
74 Instrument for Separating Vocal Cords and Opening Mouth of Esophagus. R. C. Lynch, New Orleans.
75 La Force Hemostat Tonsillectome. B. D. La Force, Ottumwa, Iowa.

65. **Case of Purpura Hemorrhagica.**—The factors of unusual interest in Goldstein's case from a laryngologic point of view were the localization of unusual and sharply marked purpuric blotches in the mouth and buccal cavity, spontaneous bleeding from the nose and gums as possible etiologic factors, the apparent ineffectiveness of internal therapy until the injection of diphtheritic serum had been made. All of the areas of pigmentation, whether in the mucosa or skin of body and extremities appeared on the left side. In the mouth and buccal cavity this intense pigmentation was outlined by a sharp straight line to the vertical edge of the median raphe in the hard and soft palate and the frenum in the gums of the lower jaw. The deepest coloration of bluish-red appeared over the hard palate corresponding to the area over the floor of the nose; Goldstein suggests that this might, perhaps, be associated with the original pathology in the alar wall of the nose and nasal wall and floor of antrum. Of all the therapeutic measures carried out in the conduct of this case Goldstein believes that the only effective agent utilized was the injection of two tubes (10 c.c. each) of anti-diphtheric serum. Thirty-six hours after injection of the serum all packings were removed from the nose and very little oozing followed.

Maine Medical Association Journal, Portland

February, IV, No. 7, pp. 1705-1748

76 Ectopic Gestation; Symptom-Complex of Its Early Stages. W. B. Moulton, Portland.
77 Cause and Cure of Eclampsia. A. P. Leighton, Portland.

Mississippi Medical Monthly, Vicksburg

February, XVIII, No. 10, pp. 187-206

78 Treatment of Lobar Pneumonia. E. W. Mackey, Purvis.
79 The Past and Present (Progress in Medicine). H. C. Buck, Friars Point.
80 Case of Hemoglobinuria of Unusual Type. T. G. Hughes, Clarksdale.
81 Medical Treatment of Exophthalmic Goiter. B. W. Fontaine, Memphis, Tenn.

New Jersey Medical Society Journal, Orange

February, XI, No. 2, pp 55-108

82 Obstructive Conditions of Gastro-Intestinal Tract. F. D. Gray, Jersey City.
83 Relation of Vaccines and Serums to General Public Health. H. D. Pease, New York.
84 Malingering. E. D. Newman, Newark.
85 Does State of New Jersey Maintain a Custodial Institution for Feeble-Minded? L. M. Halsey, Williamstown.

New York Medical Journal

February 14, XCIX, No. 7, pp. 305-356

86 The Positive and Negative Diagnosis of Gastric Cancer by Means of Serial Roentgenography. L. G. Cole, New York.
87 Aneurysms. R. A. Kelly, Philadelphia.
88 Intestinal Resection. Raymond C. Turck, Jacksonville, Fla.
89 Some Scientific Aspects of Inoculation Therapy. W. Walter, Chicago.
90 Besredka's Sensitized Vaccines. F. E. Stewart, Philadelphia.
91 Amebic Dysentery. F. C. Yeomans, New York.
92 Magnesium Sulphate and Glycerin in Treatment of Infections. E. M. Freese, Jamestown, N. Dak.
93 Two Remarkable Cases of Obesity. J. Weiss, New York.
94 Technic of Outlying Thyroid. M. S. Woodbury, Clifton Springs, N. Y.

Northwest Medicine, Seattle, Wash.

February, VI, No. 2, pp. 41-66

95 Success in Treatment of Congenital Club-Foot. C. R. McClure, Portland, Ore.
96 Cardinal Principles in Management of Bone Tuberculosis. F. J. Fassett, Seattle, Wash.
97 Scoliosis. S. C. Baldwin, Salt Lake City, Utah.
98 Kinking at First and Second Portions of Duodenum Considered as Clinical Study. N. W. Jones, Portland, Ore.
99 *Diagnosis of Chronic Stomach Troubles. K. Winslow, Seattle, Wash.
100 Plaut Vincent's Angina, with Report of Five Patients Treated with Salvarsan. R. A. Greene, Spokane, Wash.
101 Why the Cystoscope? J. Besson, Portland, Ore.

99. **Diagnosis of Chronic Stomach Troubles.**—All the entities or the diseases of the stomach to be found in text-books, Winslow claims, are in reality in most cases only symptoms, i. e., gastritis, atony, hyperacidity, hypersecretion, achylia, neuroses, with the exception of ulcer and cancer. Gastric analysis, he continues, gives many practitioners a false idea that they have achieved a diagnosis instead of a symptom and often merely a symptom of a symptom. The finding of food remnants in the fasting stomach is the most important result of the use of the stomach tube. The recent improvements in roentgenography have made this means of great value in the diagnosis of ulcer, cancer, ptosis, atony and pyloric insufficiency. The great frequency of associated abdominal lesions is not yet properly appreciated and makes diagnosis difficult and often impossible. The elimination of general diseases and enteroptosis, with its allied atony and neuroses, in the diagnosis of stomach troubles eliminates two-thirds of the cases of chronic stomach troubles. Of the remaining 30 per cent., 20 per cent. of the cases are secondary to abdominal lesions outside of the stomach and only 10 per cent. are true diseases of the stomach—ulcer and cancer.

Ophthalmic Record, Chicago

February, XXIII, No. 2, pp. 55-108

102 Prism-Dioptry Establishes Dimensional Unit at Optic Chiasm. C. F. Prentice, New York.
103 Theoretical Consideration of Some Phases of Sympathetic Ophthalmia. H. Gifford, Omaha, Neb.
104 Case of Glioma of Retina in Jamaican Two Years Old. D. F. Reeder and S. T. Darling, Ancon, C. Z.
105 Salvarsan and Neosalvarsan in Treatment of Syphilis with Special Reference to Diseases of Eye. A. A. Uhle and W. H. MacKinney, Philadelphia.
106 Hard Plug Method of Controlling Hemorrhage Deep in Orbit, as Illustrated in Case of Aneurysmal Varix. H. Gifford, Omaha, Neb.
107 Table Instead of Chart for Tonometer. E. C. Ellett, Memphis, Tenn.
108 Two Useful Remedies in Treatment of Diseases of Conjunctiva. R. L. Thomson, Spokane, Wash.

Public Health Journal, Toronto, Ont.

February, V, No. 2, pp. 67-136

109 Medical Inspection of Schools in Toronto. W. E. Struthers, Toronto.
110 Status of School Dentistry. A. Irwin, Newark, N. J.
111 School Nursing in Toronto. L. L. Rogers, Toronto.
112 School Nursing in Regina. J. Brown, Regina.
113 Japanese Gardens and Groves. F. Withrow.

Tennessee State Medical Association Journal, Nashville

February, VI, No. 10, pp. 373-412

114 Cholelithiasis. R. A. Barr, Nashville.
115 Treatment of Syphilis. P. Bromberg, Nashville.
116 Circumcision. C. F. Anderson, Nashville.
117 Means of Lessening Anesthetic Injuries and Fatalities. R. F. Patterson, Nashville.
118 Anesthetics. W. N. Lynn, Knoxville.
119 How to Care for New Baby's Eyes. R. Fagin, Memphis.
120 Treatment of Wounds. D. Eve, Nashville.
121 Triumph of Ages. M. G. Price, Mosheim.
122 Nasal Polypi. R. B. Nelson, Memphis.

Texas State Journal of Medicine, Fort Worth

February, IX, No. 10, pp. 301-332

123 Infectious of Renal Pelvis and Ureter. W. F. Braasch, Rochester, Minn.
124 *Renal Tuberculosis. F. C. Walsh, San Antonio.
125 Non-Tuberculous Infection of Kidney. A. I. Folsom, Dallas.
126 *Treatment of General Peritonitis. C. Johnson, Fort Worth.
127 Physician's Duty to Health Officials. A. W. Nash, Dallas.
128 Should State Increase Its Domain in Preventive Medicine. A. C. DeLong, San Angelo.
129 Preservation of Health. L. H. Reeves, Decatur.
130 Extra-Genital Chancroid: Report of Case. J. B. Shelmire, Dallas.
131 Glaucoma: Recent Observations with Reference to Pathology and Treatment. J. J. Crume, Amarillo.
132 Case of Melanotic Sarcoma of Chorioid. J. Mullen, Houston.
133 Preliminary Report of New Method for Therapeutic Use of Typhoid Vaccine. I. S. Kahn, San Antonio.

124. **Renal Tuberculosis.**—Two points are emphasized by Walsh, first, that all cases of so-called causeless cystitis are suspicious indications of renal tuberculosis and should be carefully examined therefor, using the cystoscope in all instances; second, a prompt nephrectomy, whenever possible, is undoubtedly the safest method of treatment.

126. **Treatment of General Peritonitis.**—Johnson is emphatic in stating that every patient with peritonitis should be operated on within the first forty or fifty hours, when possible to do so. After this period of time has elapsed, a more serious condition is present. There is a certain class of cases in which operation is as clearly indicated after as before the first fifty hours—in which the patient is strong and has resisted the spread of the infection, has a pulse volume, a heart that beats, and is not pushed; a dry skin and a general encouraging appearance. The other class of cases, past the fifty-hour mark, are those that are very bad from the beginning, susceptible to infection, rapid absorption, pinched features, a thin, rapid, pushing pulse with no volume, cyanosed and with a wet, leaky skin. These cases are clearly in no condition to withstand any kind of operation. They should be treated according to the Fowler-Murphy method—sitting posture and saline by the bowel. These cases will either terminate fatally very soon or the inflammation will localize and the operation can be done at a later period. The method of operative procedure Johnson prefers is to make a liberal incision through the semilunar line, in case of appendicitis-peritonitis; search for and remove the appendix; ascertain if any pockets of pus exist and open them; place free drainage of rubber or glass tubes, directly down, possibly another rubber or glass in the pelvis and in case of a woman drain through the vagina. When taken to his room the patient is placed upright on a Mather's bed and the saline begun by rectum. Where the small gut is loaded with fluid and distended with gas, Johnson opens the gut and drains its contents, closing the opening in the gut with a fine linen thread. In a few cases he has punctured and drained the intestine in three places. These cases have been the most satisfactory of any he has operated on.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

February, XI, No. 122, pp. 49-96

1 *Food Requirements of Infants. E. Pritchard.
2 Hemorrhagic and Gangrenous Varicella, with Report of Two Cases. H. C. Storrie.
3 Case of Purpura of Unknown Origin with Rapidly Fatal Termination. G. Pernet.

1. **Food Requirements of Infants.**—An abnormal increase in weight, say of 10 to 14 oz. per week, in a baby under a year old, if maintained for any prolonged period of time, Pritchard says, should at once suggest that the storage resources of the body are being over-strained, and such an event should lead us to expect that when the critical limit is reached, resort will be made to inner lines of defense, with possibly more serious consequences to the individual as a whole. Again, if the capillaries of the cheeks are dilated, if there is sweating about the head, and if the respiration-rate is unduly raised, we are entitled to suspect, in the absence of a better explanation, that reserve methods of heat-dissipation are being called into requisition. Then, if we are wise, we shall take steps to insure that worse things do not befall the child. We should, in fact, curtail the supply, or increase the demand for food. It is clearly the duty of the physician to exercise the greatest vigilance in the detection of these early symptoms, but it is very difficult to convince the lay mind that rosy cheeks and a fine weight record can be of unfavorable augury.

It is a matter of almost daily experience for Pritchard to find that attacks of bronchitis, diarrhea or intestinal toxemia have been preceded by prolonged periods of apparently exuberant health. He states that no infant, breast-fed or artificially fed, can be considered to be in a satisfactory condition unless its physiologic demand for food is of the following approximate standard: An infant three months old and weighing 5 kg. (11 pounds) should not require less than 690 c.c. (23 ounces) of breast-milk, or its equivalent, in the twenty-four hours; an infant 6 months old and weighing 7.5 kg. (16½ pounds) should not require less than 900 c.c. (30 ounces); and an infant 9 months of age should require not less than 1,080 c.c. (36 ounces). If, when taking food in these quantities, there is evidence, by reason of the development of any of the symptoms already mentioned, that there is an excessive intake, Pritchard would advise that steps be taken to increase the demand for food by a revision of the hygienic management of the child.

British Medical Journal, London

February 7, I, No. 2771, pp. 285-348

4 Uniform Success of Segregation Measures in Eradicating Kala-Azar from Assam Tea Gardens: Its Bearing on Probable Mode of Infection. J. D. Price and L. Rogers.
5 Wild Game as Reservoir for Human Trypanosomes. H. L. Duke.
6 Trypanosomiasis, Tsetse and Big Game. G. Prentice.
7 Epidemic Dysentery in Fiji Islands. P. H. Bahr.
8 Intestinal Schistosomiasis in Sudan. R. G. Archibald.
9 Etiology of Beriberi. W. J. Arnold.
10 Zeism or Pellagra? P. A. Nightingale.
11 *Anastomosis of Vas Deferens. W. I. de C. Wheeler.
12 Spread of Cancer in Lower Part of Large Intestine. G. L. Cheatle.

11. **Anastomosis of Vas Deferens.**—The divided ends of the vas are passed by Wheeler over the eye and point of a fine straight needle until they meet. A few points of suture are then inserted, and the needle is pushed out through the wall of the vas at a distance from the anastomotic junction. The line of sutures is wrapped round with neighboring fascia to give additional strength. Wheeler suggests that after salpingectomy the anastomosis of the fallopian tubes could readily be accomplished by the same device.

Edinburgh Medical Journal

February, XII, No. 2, pp. 97-192

13 *Tuberculin: Rationale of Its Use: Its Possibilities and Limitations. E. Beraneck.
14 Neurasthenia. J. Ritchie.
15 *Treatment of Intestinal Toxemia. D. C. Watson.
16 Neosalvarsan Treatment of Syphilis. D. J. Guthrie.
17 Royal College of Surgeons of Edinburgh: Anatomy in Early Days. C. H. Creswell.
18 Prevalence of Living Tubercle Bacilli in Edinburgh Milk. J. Miller.

13. **Tuberculin.**—The less effectively an organism defends itself against bacillary infection, Beraneck says, the less also will be the success with which the use of tuberculin is followed. This is why treatment with tuberculin is not justifiable in those acute forms of tuberculosis which at the onset cause a profound lowering of the general condition and a rapid invasion of the organs. Nor should it be used for those tuberculous patients who after a more or less prolonged resistance have exhausted their defensive resources and are almost at the point of death. The chances of success in tuberculin-therapy are increased by intervening as soon as tuberculosis is diagnosed or even suspected. It is in these circumstances that the specific curative action of tuberculin finds its place, and the best and most lasting results are achieved. Beraneck emphasizes that tuberculin-therapy must not be regarded as a "reserve" procedure, only to be resorted to when other methods have failed.

15. **Treatment of Intestinal Toxemia.**—Watson recognizes three distinct groups of conditions that arise mainly or entirely from intestinal toxemia. 1. A Neurasthenic Group.

2. Rheumatoid Arthritis. 3. A "Dyspeptic" Group. Referring to the second group, he says that as a result of a close study of the disease for many years he has been led to share the view as to its infective origin, the source of the infection being invariably one of the three mucous surfaces of the body. In the great majority of cases the infection comes from the gastro-intestinal tract, oral sepsis and pyorrhea alveolaris being not infrequently primary factors in this intestinal infection. In the remaining cases the infection comes from the genito-urinary tract or the respiratory mucous membrane. Watson is doubtful, however, whether the clinical pictures of rheumatoid arthritis are due to a single infecting agent. He regards it as probable that a slow infection by different organisms brings out the pathologic conditions that are at present included in the term rheumatoid arthritis. He is satisfied that the disease is essentially curable in its early stages. In the later stages of the disease the intestinal mucous membrane and especially the large bowel, has become seriously involved, and in some cases it is not possible to correct this by medical means.

Glasgow Medical Journal

February, LXXXI, No. 2, pp. 81-159

19 Prevention of Malaria. M. Watson.
20 History and Prevention of Venereal Disease. D. Newman.
21 *Case of Patent Ductus Arteriosus. A. W. Harrington.
22 Recent Work on Etiology of Gall-Stones. J. W. M'Nee.

21. **Patent Ductus Arteriosus.**—The one symptom on which the diagnosis was based in Harrington's case was a loud, rough, somewhat musical murmur, diminuendo in character, audible all over the cardiac area. It was well heard at the apex and the pulmonic area. It was better heard at the outer end of the left clavicle, 1½ inch from mid-sternum. It was well heard over the left back, and its site of maximum intensity is about the middle of the left scapula. It was also audible over the right back. The murmur was very long, attaining its maximum intensity after the commencement of the first sound, and lasting almost to the next first sound. The second sound was faintly audible in the middle of the murmur, but was only heard distinctly toward the sternum. Polygraph tracings showed that the cardiac rhythm was normal, and that the apex-beat, the pulsation on the right side, and that in the epigastrium were synchronous. Roentgenograms showed remarkable alterations in the contour of the heart. Instead of the normal conical shadow, the heart is more or less elongated transversely, and of the "recumbent egg" form. The right side was large and prominent, and the basal vessels swept almost straight upward to the clavicle. The photograph from behind showed the right border of the descending aorta to be prominent and distinct.

Lancet, London

February 7, I, No. 4719, pp. 367-434

23 Glycosuria. W. H. White.
24 *Treatment of Fractures of External Malleolus. J. Bland-Sutton.
25 Diathermy, or Electric Warming of Tissues of Body. H. L. Jones.
26 *Vaccines from Standpoint of Physician. H. D. Rolleston.
27 Fresh Alarms on Increase of Cancer. E. F. Bashford.
28 Operation to Improve Effect of Artificial Eye. N. B. Harman.
29 Fragility of Red Cells in Conditions Associated with Jaundice. G. D. Whyte.

24. **Fractures of External Malleolus.**—In dealing with fractures involving joints, especially when a small piece is detached, Bland-Sutton says he occasionally removes the broken fragment. He has on several occasions dissected out a broken styloid process of the radius without impairing the utility of the wrist-joint. On three occasions he has excised the hemispherical portion of the head of the humerus when it has been broken off by direct injury and displaced. In one case in which the cartilage-clad portion of the head of the humerus was broken off, in an elderly lady who was run over by a cab, the disc-shaped fragment was forced through the great scapular notch into the infrascapular fossa, lying therefore on the dorsal aspect of the scapula. These operations were followed by quick recovery and a useful limb. Small detached portions of the articular end of the humerus are not only extremely awkward to fix with wire, but difficult to keep in position by any method of splinting. Excision of such small detached fragments of the humerus is safe, simple and leaves a very satisfactory joint. The excision of small fragments of bone involving articular surfaces gives such good results in the shoulder, elbow and wrist-joints that Bland-Sutton tried it in three cases of fracture of the external malleolus.

26. **Vaccines from Standpoint of Physician.**—Opinion on vaccine therapy is divided by Rolleston into the following classes: 1. The optimistic, held by those who, while under the fascination of a new conception of a really rational treatment, have seen several cures in succession. This attitude is usually somewhat modified by time. 2. The pessimistic, more often expressed in private than in print, to the effect that vaccines never do any good and that benefit apparently due to their use is either a coincidence or is perhaps due to suggestion. 3. The doubtful or openminded. This, Rolleston says, is his position. At the present time, he continues, the results of vaccines are so uncertain that their use appears to be justified only when trustworthy therapeutic methods have failed or do not exist. That good effects, sometimes dramatic in their intensity, may follow the use of vaccines, is also undoubted. But the old question, *post hoc propter hoc*, arises. Difficult as it is to decide this problem in the absence of exact controls, it seems wiser to act as if the sequence of events was not a coincidence only, and in cases in which nothing better is available to give patients the chance of benefit from vaccine treatment.

Bulletin de l'Académie de Médecine, Paris

January 20, LXXVIII, No. 3, pp. 57-90

30 *Emetin and Hemoptysis. Aubert, Bouyer and Chauffard.
31 Fluorin in Animal Tissues. A. Gautier.
32 Cholera in the Balkan Wars. V. Babes.
33 Re-Educating the Ear by Exercising the Hearing with Small Siren. (Règles acoustiques et cliniques de la rééducation auditive.) Marage.

30. **Emetin Arrests Hemoptysis.**—Chauffard states that nothing he knows of has such a rapid and effective action in arresting hemoptysis as emetin. Without nauseating or reducing the blood-pressure appreciably, the tendency to hemorrhage is arrested almost at once by injection of 0.04 or 0.06 c.c. of emetin hydrochlorid. This occurred apparently irrespective of the cause of the hemoptysis, whether it was the result of a tuberculous or pneumonic process or of perforation into a bronchus of an amebic abscess in the liver.

Journal d'Urologie, Paris

January, V, No. 1, pp. 1-120

34 *Ambard's "Uremic Constant" with Tuberculosis of the Kidney. (Des applications de la constante à la néphrectomie pour tuberculose.) F. Legueu.
35 *Syndrome of the Movable Kidney. (Rein mobile.) G. Bolognesi.
36 Bladder Disease with Deposits of Calcium Phosphate. (La cystite incrustée.) J. François.
37 Lesions in the Bladder Mucosa in Hemorrhagic Purpura. C. Bruni.
38 Aspiration in Treatment of Chronic Urethritis. A. Cariani.
39 Minor Technical Point in Catheterization of the Ureter. A. Brandao, Jr.

34. **Ambard's "Uremic Constant" in Estimation of Functional Value of Kidneys.**—Legueu has applied this test in 1,200 cases and states that further experience has only confirmed his previous statements in regard to its precision and reliability. (His preceding communication on the subject was reproduced nearly in full in these columns May 3, 1913, p. 1400.) The uremic constant is the constant ratio between the urea in the blood and the square root of the urea excreted in the urine, with due regard to the weight of the individual and the concentration of the urine. The uremic constant in case of a tuberculous process in the kidney is modified by the extent of the functional disturbance entailed by the morbid process, also by the concomitant or consecutive inflammation in the kidney, and by the extent of the compensating hypertrophy of the sound mate or of parts of the diseased kidney. The sound mate in time may become so functionally capable that it may compensate entirely the diseased kidney; in this case the uremic constant would indicate normal con-

ditions in regard to the secretion of urine, and the diseased kidney could be removed without the slightest hesitation.

In every case in which nephrectomy was done on the basis of a normal uremic constant—about 0.07—the ultimate course confirmed the correctness of the premises. A number of typical cases are described in detail out of the seventy in which the formula was calculated in advance of the nephrectomy. In twenty-two cases it proved impossible to introduce the ureter catheter and here the uremic constant was almost the sole reliance. None of the seventy patients died from renal insufficiency except one, and this was the only case in which the findings of the uremic constant had been disregarded, and, for certain special reasons, the operation was attempted contrary to its teachings. The fatal outcome of the nephrectomy in this case sustains anew the diagnostic importance of this method of estimating by a mathematical formula the work the kidneys are capable of doing in each individual.

35. **The Syndrome of the Movable Kidney.**—Bolognesi analyzes 28 cases of movable kidney in his practice to illustrate the multiplicity of symptoms which it may induce and thus mislead to the assumption of various abdominal affections. In only 11 cases were there pains, paroxysmal or otherwise; in 2 there were nervous phenomena; in 2, symptoms of gastro-intestinal atony; in 1, a combination of gastro-intestinal disturbances and nervous phenomena; in 3, atony of the digestive tract with pain in the appendix; in 2 cases the movable kidney compressed the common bile duct with consequent retention of bile and formation of concrements; in 1 case the stomach had suffered most, the result being complete and persisting lack of gastric secretion. In 3 cases the kidney had developed intermittent hydronephrosis and in 3 others there was a catarrhal affection of the kidney pelvis or bladder or both. The fact that the above syndromes were the work of the displaced kidney was proved by their nearly constant complete subsidence when the kidney had been fastened in or near its normal place. He describes the technic for this which has been in constant use in the clinic at Modena since 1898 with invariable satisfaction. It is a combination of the Guyon-Tuffier methods, fastening the kidney to the muscle.

Presse Médicale, Paris

January 21, XXII, No. 6, pp. 53-64

40 Manual Training for the Physician. (Leçon d'ouverture: chaire d'opérations et appareils.) A. Broca.

January 24, No. 7, pp. 65-76

41 Closed Tuberculosis of the Kidney. Ehrenpreis.
42 Systematization of Lesions in Ordinary Pulmonary Tuberculosis. Chierat.
43 Serodiagnosis of Cancer. R. Erpicum.

Revue de Médecine, Paris

January, XXXIV, No. 1, pp. 1-79

44 The Antigen Reaction in Tuberculosis. (La réaction de l'antigène.) R. Debré and T. Paraf. To be continued.
45 Cancerous Meningitis. G. Humbert and W. Alexieff. Commenced in preceding volume.

Revue Médicale de la Suisse Romande, Geneva

January 20, XXXIV, No. 1, pp. 1-88

46 Cysts in Mesentery and Spleen. (Kyste du mésentère et kyste de la rate.) Welth.
47 *Cancer of the Thyroid. X. W. Kovarsky. Commenced in preceding volume.
48 Compulsory Notification of Tuberculosis in Italy in Fifteenth Century. A. Cramer.
49 *Viability of the New-Born. R. Chaplus.
50 Roentgen-Ray Cancer. (Histoire d'une radiodermite chronique.) C. Dubois.

47. **Cancer of the Thyroid.**—Kovarsky's monograph is based on thirty-three cases of malignant disease of the thyroid with the case-histories of most of them. No constant connection could be discovered between the type of the cancer and its clinical course. Nine of the sixteen patients with epitheliomas were men and two of the five with sarcomas. The youngest patient was a boy of 13. As a rule the thyroid malignant tumor develops slowly and insidiously, and a year or two or more may elapse before the tumor begins to cause inconvenience. Then it begins to grow rapidly and interferes with speech and swallowing and the general health suffers. Metastasis in various organs is frequent, but Kovarsky found only one instance of a metastasis in bone tissue. A carcinoma developing in a ductless gland is necessarily in close connection all the time with the blood vessels, and hence there is a greater tendency to obstruction of the veins with particles of cancer-tissue and to blood-borne metastasis. In the four cases of pavement-celled carcinoma, supposed clinically to be primary growths, necropsy revealed a primary focus elsewhere.

49. **Viability of the Prematurely Born.**—The legislation on this subject needs revision as in case of inheritance of property or question of paternity few states would recognize as legitimate a child born at the fifth month of a pregnancy. Chapius reports the case of a child born at a little over the fifth month. Delivery had been hastened by an accident to the mother, and the child lived seventeen hours. It weighed 830 gm. and measured 28 cm. and swallowed part of what was given it. Tissier has reported the case of a child born at the sixth month who lived two months; Leclerq of Lille, a child weighing 670 gm. and measuring 25 cm. that lived twenty-one hours, but the case reported by Maunsell is probably the most extreme on record, the child weighing only 510 gm. and yet surviving for over a day. The Swiss law would not recognize any of the above children as human beings, 180 days of gestation being the legal minimal limit of viability.

Semaine Médicale, Paris

January 21, XXXIV, No. 3, pp. 25-36

51 *The Thymus and Exophthalmic Goiter. F. Rose.
52 *Induced Hyperemia in Exploratory Examination. (Les applications exploratrices de l'hyperémie active.) F. Lejars.

January 28, No. 4, pp. 37-48

53 *Genito-Urinary Tuberculosis. F. de Quervain.
54 The New Conception of Enterostomy. F. Lejars.

51. **The Thymus in Exophthalmic Goiter.**—Rose compares what has been written on this subject in various countries in the last few years, the consensus of opinion being evidently that the thymus plays an active part in a certain number of cases of exophthalmic goiter, particularly those with predominating vagotony. In operating, it seems advisable to resect the thymus as well as the thyroid whenever direct palpation during the operation reveals its presence; clinical and radioscopic examination is less reliable and may prove deceptive. At the same time Rose emphasizes that the enlargement of both the thyroid and thymus is the effect, as a rule, of a general constitutional anomaly of which the instability of the nervous system is an important factor. On account of the importance of this factor, it is indispensable to apply measures to soothe the nervous system, supplementary to whatever other measures may be adopted. Sedative drugs, hydrotherapy and electrotherapy may all prove useful, in addition to psychotherapy.

52. **Exploratory Active Hyperemia.**—Lejars comments on the important information to be derived from the active hyperemia induced in a region when it is a question of gangrene or cancer beyond. Moskowicz advised applying a constricting band to the root of the limb for a time and then noticing the exact limit of the redness that followed the influx of blood when the band was removed. Lejars operated below the knee in one case nearly five years ago on the information thus derived, when otherwise he would have had to amputate in the lower third of the thigh; there has been no disturbance since. Moskowicz later said that the blood could be expelled equally well by raising the limbs perpendicular; still later he has found that the active hyperemia following the vigorous rubbing in of alcohol is equally instructive in marking the limit of the region in which the circulation is still good. This latter method is applicable to mammary cancer also; scrubbing and rubbing alcohol and ether well into the skin causes considerable redness except where the cancer, by compressing or obliterating branches of arteries, induces permanent anemia of the skin. These zones keep pale throughout or in patches, and although there is nothing to prove that these patches of anemic skin correspond to the extension of the cancer, yet this presumption is plausible. He found with non-malignant tumors that the active hyperemia induced in this way was

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uniform and regular, while it was patchy and very irregular in all the cases of malignant tumor. The only drawback is that this exploratory rubbing in of alcohol interferes with the prevailing iodin sterilization technic.

53. **Tuberculosis of the Genito-Urinary Apparatus.**—De Quervain discusses in turn the four principal forms, affecting the kidney and ureter, the bladder or the male or female genital organs. He insists that the general practitioner must make or have made a minute examination of the urine both from the chemical, the microscopic and the bacteriologic points of view whenever there is a persisting functional disturbance in the bladder or trace of blood or pus in the urine which cannot be clearly explained by some other affection. He advises removal of the kidney even when the tuberculous process is causing only slight functional disturbance. To wait for the response to a course of conservative measures is equivalent to aggravation of the local trouble and possibility of involvement of the other kidney. Expectant treatment, therefore, leads to a tardy operation or to bilateral disease. The exceptional cases of long survival on record with a tuberculous process in one or both kidneys do not modify these conclusions, for we should not base our advice on exceptions. He reiterates the importance of general treatment even after the operation, saying that the task is by no means concluded with the removal of the focus.

Beiträge zur klinischen Chirurgie, Tübingen

December, LXXXVIII, No. 2, pp. 231-522

55 Turning Back the Sternum for Access to Bleeding Vessels in Neck; Two Cases. (Blutstillung bei Verletzung der grossen Halsgefässe mit Hilfe der Aufklappung des Manubrium sterni.) V. v. Hacker.
56 Origin of Retrograde Incarceration. C. Ritter.
57 Diagnosis of Tumors of Spermatic Cord. (Geschwülste des Samenstranges.) Hanck.
58 Upward Dislocation of the Ankle. (Luxation des Fusses im Talocruralgelenk nach oben.) Wegner.
59 *Atonic Dilatation of the Kidney Pelvis and Ureter. (Atonische Dilatation des Nierenbeckens und Harnleiters.) R. Bachrach.
60 *Alleged Dangerousness of Injecting a Silver Salt into the Kidney Pelvis. (Zur Frage der Gefährlichkeit der Pyelographie.) R. T. Schwarzwald.
61 *The Carotid Gland and Its Tumors. J. E. Schmidt.
62 *Tubercle Bacilli in the Blood Stream, Especially with Surgical Tuberculosis. C. Mau.
63 *Enterostomy with Tube and Larding Needle. (Die Enterostomie nach v. Hofmeister's Spicknadelmethode.) O. Nägele.
64 Nail Extension. J. Kantak.
65 Spontaneous Dislocation of the Wrist. H. Burckhardt.

59. **Atonic Dilatation of Kidney Pelvis and Ureter.**—Bachrach states that the complete picture of dilatation from mechanical obstruction in the ureter may develop solely from atony of the ureter entailing dilatation of its walls and the consequent train of infected hydronephrosis and hydro-ureter. In one of the two cases reported the condition occurred alike on both sides. The patient with the trouble on one side alone was cured by resection of the dilated ureter and kidney; nothing could be done for the other patient except to have the ureters catheterized at regular intervals.

60. **Alleged Dangers of Pyelography.**—Schwarzwald states that in 150 cases he has had a solution of a silver salt injected into the kidney pelvis for Roentgen-ray work and the findings have been extremely instructive. No injury resulted except in one case, and in this, as well as in eight similar cases of injury from the procedure which have been reported, defective technic was responsible for the mishap. The mishaps were never serious and the kidneys recuperated apparently completely in time. He analyzes these nine cases in detail, pointing out the defects in technic in each. All agree on the importance of ascertaining exactly the amount which fills the pelvis and not injecting more than this. The signs that the capacity of the pelvis has been reached are that the patient begins to feel pain in the region and that the fluid being injected runs over and back into the bladder; this can easily be seen with the cystoscope still lying in the bladder. When the kidney pelvis is not supposed to be dilated, it is better not to attempt pyelography.

61. **Tumors in Carotid Gland.**—Schmidt reports what he thinks is the fortieth case on record of a tumor in the carotid gland. His patient was a woman of 52 who had had a small tumor in the right side of her neck for twenty years but it had recently commenced to grow and be painful. There was a corresponding tumor on the other side as large as a hen's egg and the latter was removed first under local anesthesia, and seven weeks later the other. Both tumors were in the carotid gland and one had involved the internal carotid artery to such an extent that a segment had to be resected; the other tumor shelled out without injury of the vessels. He reports considerable research on cats which demonstrated that the carotid gland could be removed without danger from loss of its functioning. His patient was in good health when reexamined a year later except that there was slight atrophy of the left half of the tongue; evidently the hypoglossus nerve had been injured a trifle in the first operation. In three of the thirty-one operative cases on record the patients succumbed later to softening of the brain, the result of disturbance in the circulation in the carotid arteries; two others had hemiplegia and ten others died from pneumonia, pulmonary edema or after-hemorrhage. A preliminary loose ligation of the artery might be advisable, and possibly in case of extensive defect, a stretch of the saphena might be implanted.

62. **Tubercle Bacilli in the Blood with Surgical Tuberculosis.**—Mau emphasizes that the results of recent bacteriologic research have demonstrated that tubercle bacilli may be found in the circulating blood with surgical tuberculous processes and long after they have apparently completely healed. Treatment should therefore be general far more and far longer than has hitherto been deemed necessary with local tuberculosis in bones or soft parts. The general treatment should be kept up for years after the local process has healed. Whether all the acid-alcohol-formaldehyd-fast bacilli seen in the blood with the microscope are really all tubercle bacilli is still a question, which only more delicate technic or inoculation of animals can hope to decide. But the findings harmonize with what we know of the nature of tuberculosis as a general infection, and justify the conception of a primary and secondary phase of the disease. In his own experience he obtained positive findings only in one of six patients with incipient focal surgical lesions—he thinks that antibodies are generated at this stage enough to keep down the bacilli in the blood. The findings were positive in 14 of 24 with florid lesions, and in 3 of 10 after healing or excision of the focus. With joint affections the findings were positive in about 50 per cent., but in nearly 100 per cent. with tuberculous kidney or testicle disease.

63. **Tube Enterostomy.**—Nägele gives an illustrated description of the method of making an opening into the bowel by means of a rubber tube which can be withdrawn later without leakage. The special advantages of this technic are the absolute continence of the outlet thus formed, the lack of any soiling of the laparotomy wound with fecal matter or fluid, the ability to utilize the tube to feed the patient and thus avoid the danger of inanition when the classic "high fistula into the bowel" refuses to heal up. The rubber tube is not brought out through the laparotomy wound but through a minute incision in sound tissue some distance beyond. The fenestrated end of the 60 cm. tube is introduced through a minute incision in the distended loop and is pushed in for 3 or 4 cm. Three or four stitches are taken through the bowel wall and tube to hold it in place, the ends of the threads brought outside but not tied. Then the other end of the tube is fitted into the handle of a special harpoon needle, made like an ordinary kitchen larding needle. The needle is then forced along horizontally through the abdominal wall—generally through the left rectus—until it can be conveniently brought out through the skin, trailing the tube after it. The suture threads sustaining the loop and tube are then brought out and tied over rolls of gauze, and the result is a permanent outlet for emptying the bowel or supplying nourishment. At any time later, by cutting the threads, the tube is released and can be easily drawn out entirely, the folded-in edges of the hole in the gut closing automatically and spontaneously after it. The simplicity and safety of this method justify its application far more extensively than has hitherto been

deemed possible, using it as a preliminary and in prophylaxis, not waiting until it is a last resort.

The method has been in constant use in Hofmeister's service for ten years and at Stuttgart for six. Eloquent testimony as to its superior advantages is afforded by Nägele's comparative summaries of fifty cases in which the method was applied and of twenty-three other cases in which the ordinary technic for enterostomy was followed, with its usual train of evils, infection of wound, eczema, serious secondary operation and bad condition of the tissues for the latter—all of which is avoided by the non-leaking tube technic. Unfortunately the latter cannot be applied when the gut is too much damaged or too friable to be thus drawn up to the skin. It is particularly useful as a preliminary or prophylactic measure and also for feeding purposes with jejunostomy or gastrostomy, or for opening an outlet from the bladder. The latter use for it, however, Nägele remarks, "is another story."

Berliner klinische Wochenschrift

January 26, LI, No. 4, pp. 145-192

66 *Recurring Colic in Upper Abdomen in Children. (Sogenannte recidivierende Nabelkoliken der Kinder.) H. Küttner.
67 Magnesium Sulphate in Experimental Tetanus. H. Stadler and W. Lehmann.
68 Staphylococcus Sepsis after Furunculosis. H. Cassel.
69 Torticollis from Bone Growth. (Fall von ossärem Schiefhals.) G. Müller.
70 Thorium X in Pernicious Anemia. Arneth.
71 Treatment of Sciatica with Gymnastic and other Exercises in Full Bath. (Behandlung der Ischias mit Bewegungsbädern.) L. Brieger.
72 Kidney Functioning with Anuria from Reflex Action. M. Ghiron.
73 Experimental Cirrhosis of the Liver. M. Lissauer. Commenced in No. 3.
74 Physiology of Proteins. (Neuere Arbeiten über die Physiologie der Eiweisskörper.) P. Rona.

66. Recurring Colic in Children.—Küttner does not agree with Moro in his view of the recurring disturbances in the upper abdomen in certain children (summarized in THE JOURNAL, January 31, p. 420). Küttner's experience indicates rather that these recurring disturbances and also periodical vomiting and transient disturbances in micturition all are traceable to mischief in the appendix, and all can be cured by appendicectomy. Disturbance in the appendix region is liable to make itself manifest first at the umbilicus, not only in children but in adults as well. The trouble in the appendix in this case is less of an inflammatory than of a mechanical nature; the appendix may be abnormally long and get twisted or kinked occasionally or permanently, or it may spasmodically contract. The permanent cure of the recurring umbilical colics after removal of the appendix is the best testimony to the connection between them, and he relates six typical cases of the kind.

One of the little patients was Küttner's own child, an otherwise healthy little lad, who suffered from these recurring umbilical colics. An eminent pediatrist diagnosed the case as the "hypersensitiveness of a neuropathic child." The attacks grew less frequent and less severe in time, but in their place the child had periodical attacks of vomiting. As there was nothing otherwise to suggest a neuropathic disposition, Küttner returned to his first suspicion of appendix mischief, but nothing could be detected wrong in the appendix region. Then suddenly from a clear sky, six years after the first signs of the umbilical colic, the child developed gangrenous appendicitis. The appendix was unusually long but not adherent and in apparently normal condition except for gangrene in the middle part. The boy then confessed for the first time that he had had pain in the umbilicus region with his attacks of vomiting, and that it also pained him to urinate at these times. If the boy had told of this, an interval operation would have been done without fail, and he would have been spared his gangrene, as Küttner regards this occasional pain at urination as almost a certain sign of appendicitis if there is nothing else to explain it.

Correspondenz-Blatt für Schweizer Aerzte, Basel

January 24, XLIV, No. 4, pp. 97-128

75 Sanitary Conditions in Switzerland a Century Ago. F. Zimmerlin.

Deutsche medizinische Wochenschrift, Berlin

January 22, XL, No. 4, pp. 161-208

76 *Acute Threatening Affections of Spinal Cord and Medulla Oblongata. Grober.
77 Treatment of Disease of Eustachian Tube. A. Denker.
78 Determination of Typhoid Bacilli in the Urine with Aid of Berkefeld Filter. A. Denker.
79 *Parasacral Anesthesia. R. Tölken.
80 Congenital Syphilis and Serodiagnosis. R. Ledermann.
81 Agglutination of Spermatozoa by Serum; Most Intense with Serum from Myoma Patients. (Ueber die Spermareaktion.) C. Sakaki.
82 Thermotherapy in Gonorrhea. R. Bromberg.
83 Technic for Examination of Sputum. (Zur Technik der Antiformin-methode.) Gettkant.
84 Technic for Phototherapy. (Die Vor- und Nachteile in der Anwendung verschiedener Apparate zur Phototherapie.) L. Freund.

76. Acute Spinal-Cord and Medulla Disease.—Grober reiterates the importance of having the victim of an accident to the spine taken at once where he can have proper care, and he urges physicians in small towns to see to it that provisions for this are available. In the typical case he takes as the basis for his lecture, fully three hours had elapsed before the man reached the hospital, the town (Jena) not having the ambulance facilities of the large cities. The spine was fractured at the eleventh thoracic vertebra and protruded, and the first thing he did was to relieve the pressure here by having a ring water-bag slipped under the spine. If a ring water-bag or air-cushion is not available, hay or straw can be twisted up into a ring for the purpose; it must be big enough. Besides the ring air-cushion, he had the patient placed on a water-bed to prevent all danger of resting on the fractured part of the spine. The soft parts here must also be protected against injury and he takes great pains to harden them, washing off the exposed regions with aqueous solutions of tannin or alcohol or cologne water, applied twice a day, when the patient has to be moved for cleansing or catheterizing. The injured region must be kept as still as possible.

The pressure on the cord may sometimes be reduced by stretching the spine, but he advises to wait for this until the patient has had a few days to recuperate. When operative measures are required, it is better not to delay; they may do great good in appropriate cases but in others they may bring the patient into great danger. In case of hemorrhage in or near the spinal cord, ice-bags, cupping or the actual cautery might prove useful, but Grober denounces them as a rule because they conflict with the principle of treatment which he advocates, namely, absolute quiet. If the hemorrhage keeps up, gelatin might be given in subcutaneous injections. He says of acute myelitis, etc., that the same principle of relieving and reposing the spine applies here also.

His experience with epidemic poliomyelitis has repeatedly confirmed the great advantage of giving large doses of calomel in the first days of the infection, even when the fever was briefly transient. Ice-bags relieve but do not seem to modify the disease process. He believes that acute ascending paralysis is merely one form of infectious poliomyelitis; in a number of the epidemic cases in recent years the disease developed with the clinical picture of Landry's paralysis. When the paralysis involves the respiratory muscles, there is always a forlorn hope that by tiding the patient along with artificial respiration the paralysis may finally subside. Rhythmic faradization of the phrenic nerves might serve the purpose. With myelitis of other types, treatment for syphilis may remove the cause; other indications are to protect against bedsores and development of deformities, having the patient drink copiously to keep the bladder well flushed. With bulbar paralysis, atropin may arrest the tormenting salivation; the swallowing muscles may be trained to act better by passing a galvanic current through them, inducing twenty swallowing movements at a sitting once a day with a current of 10 or 20 milliamperes. He discusses further caisson sickness and spinal meningitis, reiterating in conclusion that the nursing, the care of the patient, is the main thing to ward off complications with spinal cord trouble and tide the patient past the danger points.

79. Parasacral Anesthesia.—Tölken reports his experiences with Braun's technic for blocking the nerves as they emerge from the sacrum. The technic is exceptionally simple and

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easy as the bony landmarks are so prominent. He has applied the method in forty-two cases for various operations on the organs of the small pelvis, external genitals, peritoneum and floor of the pelvis, perineal prostatectomy and excision of rectal cancer—in short, for all operations within the domain of the sacral plexus. The anesthesia was perfect in all but one case, and even in this, general anesthesia did not become necessary. No disagreeable by-effects were noticed.

Jahrbuch für Kinderheilkunde, Berlin

January, LXXIX, No. 1, pp. 1-122

85 A New Clinical Picture: Large-Celled Glandular Degeneration. (Ein unbekanntes Krankheitsbild.) A. Niemann.
86 Case of Congenital Atresia of the Anus. H. Hilgenreiner.
87 General Paralysis in Ten-Year-Old Boy with Necropsy. A. Collett.
88 Treatment of Rickets. (Rachitis.) E. Schloss.
89 Case of Scarlet Fever Complicated by Meningococcic Meningitis; Recovery. Z. v. Barabas.
90 Course of Tuberculin Skin Reaction in Children. J. Cronquist.
91 Milk Coagula in Infants' Stools. V. Poulsen.

Medizinische Klinik, Berlin

January 25, X, No. 4, pp. 137-182 and Supplement

92 Tuberculosis in Childhood; Prophylaxis and Treatment. E. Müller.
93 *Pulsus Paradoxus and Lordotic Albuminuria. F. Gaisböck.
94 *Cardiospasm. A. Eschbaum.
95 Vagitus Uterinus. R. Franz.
96 Casein-Calcium Milk for Infants with Nutritional Disturbances. (Caseincalciummilch.) C. Beck.
97 Dispensary Tuberculin Treatment. E. Suess.
98 Diathermia in Lupus. O. Salomon.
99 Dialysis Serodiagnosis in Psychiatry. V. Kafka.
100 Otogenous Abscess in Temporal Lobe. R. Leidler. Concluded.
101 Cultivation of the Pale Spirochete. Sowade.
102 *Arteriosclerosis. L. Aschoff.

93. **Abnormal Pulse with Orthostatic Albuminuria.**—Gaisböck noticed irregular or intermittent pulse in all of the eleven cases he reports of lordotic albuminuria. The patients were from 14 to 30 years old, about half being over 20. Albuminuria developed in all when they assumed the lordosis position, and tube-casts also appeared in the urine in some under these conditions, so that we must accept a lordotic cylindruria as well as lordotic albuminuria. The irregularity observed in the radial pulse probably occurs in the same way in the pulse in the renal arteries, and this entails the albuminuria and tube-casts.

94. **Treatment of Cardiospasm.**—Eschbaum reports a case in a previously healthy woman of 24 free from neuropathic tendencies. He describes the long list of measures applied and means of treatment—all to no avail, and nothing was left but gastrostomy as a last resort. Just before the contemplated operation, however, he had the patient swallow an inflatable bag. After it was in the stomach he inflated it to the maximum and then pulled it by main force back through the cardia. He did this twice in one week, and the spasm of the cardia was conquered and there has been no further disturbance during the nine months since. Of course, he adds, there is some danger connected with this forcible procedure, but no more than with the gastrostomy otherwise necessary.

102. **Arteriosclerosis.**—Aschoff presents clinical and experimental evidence to sustain his assumption that arteriosclerosis is an example of the pathology of the intercellular substance. The loosening up of this intercellular cement substance permits penetration of blood plasma, with consequent deposits of cholesterol or calcium as the case may be—the result being the condition we call arteriosclerosis.

Mitteilungen aus dem Grenzgebiete der Med. und Chir., Jena

XXVII, No. 3, pp. 359-574. Last indexed Jan. 31, p. 419

103 *Typhoid Fever in the German Army. F. Meyer.
104 *Differentiation of Abdominal Diseases by Symptoms on the Part of the Vegetative Nervous System. A. Thles.
105 Causes of the Eye Symptoms in Exophthalmic Goiter. (War die Erklärung Landströms über die Entstehung der Augensymptome bei Morbus Basedowi richtig?) A. Troell.
106 *Chronic Juxtapyloric Ulcer. (Zur Pathologie und Therapie des Magengeschwüres. II.) S. Kemp.
107 *Diagnosis of Stomach Disease. (Moderne Magendiagnostik.) V. Schmieden, R. Ehrmann and M. Ehrenreich.
108 Circumscribed Chronic Traumatic Serofibrous Spinal Meningitis. H. Oppenheim and F. Krause.
109 *Changes in the Heart after Direct Massage through the Diaphragm. (Die Veränderungen des Herzens nach direkter transdiaphragmatischer Herzmassage.) H. Boehm.

103. **Typhoid Fever in the German Army.**—Meyer tabulates under various headings all the cases of typhoid and its complications in the German army from 1873 to 1910, comparing them with similar data from the French, Austrian and Italian armies. In the Prussian army the proportion of incidence of typhoid has dropped from 6.7 per thousand in 1882 to 0.4 in 1909, while the corresponding figures in the French army are 16.6 and 3.4; in the Austrian, 10.6 and 1.7, and in the Italian, 8 and 4.1 (1902). The list of complications traced to the typhoid bacillus is a long one, over fifty-four in all, including embolism, gastric hemorrhage, pericarditis, aneurysm of the aorta, severe pulmonary affections, middle ear disease and epilepsy.

104. **Differentiation of Abdominal Diseases by Symptoms on the Part of the Autonomic Nervous System.**—Thies calls attention to the instructive information afforded in various abdominal affections by the symptoms of hyperemia, secretion, etc., resulting from irritation of the vagus nerve or its antagonist by the local morbid process. He has been making a special study of the subject of recent years and summarizes thirty cases of gall-bladder disease with a table showing the symptoms on the part of the vegetative nervous system which seemed to be characteristic of this affection. Severe constipation was noted in 86.6 per cent.; cold hands and feet, especially at the time of the attacks, in 83.3 per cent.; vomiting in 80 per cent.; palpitation of the heart in 73.3 per cent.; itching of the skin, general or localized, in 66.6 per cent.; imperious desire to urinate in 56.6 per cent.; dyspnea in 53.3 per cent.; sudden sweating in 33.3 per cent; diarrhea in 20 per cent., and increased or inhibited saliva secretion in 20 per cent. In a dubious case of abdominal disease, the discovery of one or more of the above symptoms will add presumptive evidence to the assumption of gall-bladder disease. On the other hand, with a tumor in the rectum it was not unusual to note a difference in the pupils and a wide difference in the width to which the eyelids are opened. With a gastric or duodenal tumor, he often noticed excessive salivation. With appendicitic diarrhea of unmistakably nervous origin, there was no difference in the pupils unless the appendix was turned up on the colon. With cicatricial changes in the colon, the region of the flexure or the right part of the transverse colon the pupils were found constantly non-symmetrical, while this was not the case with affections involving the cecum, the left part of the transverse colon and the upper descending colon. It is probable that many symptoms on the part of the heart with gynecologic affections can probably be explained by the same mechanism, hyperfunctioning on the part of the vegetative nervous system.

The correct interpretation of the above symptoms points the way to effectual treatment; atropin, pilocarpin, physostigmin and epinephrin have their indications as the symptoms indicate the predominant work of the vagus or sympathetic part of the vegetative nervous system. The annoying itching, for example, can be readily cured by pilocarpin. Itching is a very frequent accompaniment of gall-bladder disease. It generally comes on after the subsidence of the attack, and it does not last longer than from five to twenty minutes as a rule, coming on suddenly and disappearing equally abruptly. But with gall-bladder disease the pupils are symmetrical, which is usually not the case when there is disease in the rectum.

106. **Juxta-Pyloric Ulcer Syndrome Has Been Mistakenly Credited to Duodenal Ulcer.**—This is practically the same article which was summarized in THE JOURNAL, Oct. 18, 1913, p. 1500. The end-results in nineteen patients recently reexamined are given, all practically confirming the principles which Kemp and Faber advocate, namely, that with a juxtapyloric ulcer, regardless of whether it is in the duodenum or stomach, a simple gastro-enterostomy cures the patient of all trouble at one stroke and permanently. With ulcer at other points, resection is generally necessary.

107. **Diagnosis of Stomach Affections; Forty Operative Cases.**—This communication is the joint work of internists and surgeons and relates the details as the various means for

diagnosis were applied and the findings compared with what was found at the operation and the course of the cases later. The Roentgen pictures of nearly every case are given. Among the general impressions left by these experiences is that ulcer and hour-glass stomach generally have a long history of disturbances, from two to twelve months in 4; three to ten years in 10, and eleven to thirty-six years in 6. On the other hand, in 14 cases of cancer, the first signs of trouble had been noted only from one to seven months before in 9 cases, from eight to fifteen months in 3, and twenty-one months in 1 and sixteen years in 1. The patients with cancer had usually never had any disturbances on the part of the stomach before. One of the cancer patients was only 28 while one of the pure ulcer patients was 72. Abrupt loss of weight may occur with benign as well as with malignant disease of the stomach. Some of the gastric cancers developed with very little subjective symptoms and some of the duodenal ulcers without the alleged duodenal syndrome, while the duodenal syndrome was encountered in several cases without ulcer or with only an ulcer in the stomach. The tender point to the right of the umbilicus is seldom absent with duodenal ulcer, and very rarely found with other affections. Four patients with ulcer in the pylorus region complained that they suffered most from pain while they were at work; this pain from traction at work might be found more frequently if sought for. Only two of the cancer patients and one of the others complained of a distaste for meat. Two of the cancer patients also complained that the food stuck in the throat near the jugular vein although the cancer was in the lesser curvature. Total achylia or subacidity was found in 85.7 per cent. of the cancer cases and in 16 per cent. of the others. Ulcers and their sequels were accompanied by hyperacidity in 63.2 per cent., but with pure duodenal ulcer only in 1 of the 7 cases. The lactic-acid reaction was obtained in 57 per cent. of the cancer cases but also in 8 per cent. of the others. Occult blood was never found except with an ulcer or cancer; with the former in 57.8 per cent., with cancer in all but 3 of the 14 patients. The cancer was of the scirrhus type in 2 of the non-bleeding cancers. The gastroscope was found too dangerous for routine use; it is liable to perforate the stomach.

109. **Changes in the Heart after Direct Massage through the Diaphragm.**—Boehm has had occasion to examine the heart in four cases after direct massage had been applied, and he says that the resulting injury of the heart had been so severe that it alone was enough to explain the fatal outcome.

Monatsschrift für Geburtshilfe und Gynäkologie, Berlin

January, XXXIX, No. 1, pp. 1-146

110 Neuwirth's Intra-Uterine Forceps. A. Martin.
111 Condition of the Mucous Membrane of the Uterus at the Menstrual Period. R. Schröder.
112 *The Demonstration of Protective Ferments against Bacteria by Means of Abderhalden's Dialysis. A. Fekete and F. Gal.
113 High Mortality of Appendicitis during Pregnancy. M. Rosenstein.
114 Case of Primary Carcinoma of the Tube Developing at the Site of an Old Tuberculous Focus. K. Lipschitz.
115 Vaginal Celiotomy. P. Jung.
116 Relation of Nursing to Infant Mortality and Infantile Diseases. G. Hirsch.

112. **Demonstration by Dialysis of Protective Ferments against Certain Bacteria.**—Fekete and Gal used Abderhalden's technic, merely substituting bacterial albumin for placenta tissue. They found in normal rabbits' blood no ferments which digested colon and typhoid bacilli. After the injection of dead bacteria, enzymes appeared which could be demonstrated by dialysis. There were some points of difference in the enzymes but not enough so that those for colon and typhoid bacilli could be distinguished. Those for colon bacilli and staphylococci could be distinguished, however. Further experiments will be required to show whether the method can be used in human subjects for diagnostic purposes.

Münchener medizinische Wochenschrift

January 27, LXI, No. 4, pp. 169-224

117 Diabetes Not a Primary Overproduction of Sugar. F. Rolly and H. Imvid.
118 Retro- and Transduodenal Choledochotomy. F. v. Flnk.
119 *Research on Benzin Poisoning. R. Jaffé.
120 *Secondary Hypophysis Tumors and their Relation to Diabetes Insipidus. M. Simmonds.
121 *Anal Fistula: Cause and Treatment. E. K. Frey.
122 Inflatable Disk for Compression of the Lung. (Versuche zur pneumatischen Lungenplombierung.) W. Schoenbank.
123 Technic for Radiotherapy. (Intensiv- oder Dauerstrahlung?) S. Löwenthal and A. Pagenstecher.
124 Animals That Think; the Terrier, Rolf. (Denkende Tiere.) K. Gruber.
125 The Bacteria Murder Case. (Ueber den Giftmordprozess Hopf.) M. Neisser. Discussed editorially, p. 704.

119. **Benzin Poisoning.**—Jaffé has been able to find only nine fatal cases of benzin poisoning on record in the literature, but he has encountered two cases himself. His experiments on guinea-pigs and rats confirmed the findings in the clinical cases, namely, that the typical injury in benzin poisoning seems to be extensive hemorrhages in both lungs. The benzin is evidently eliminated through the lungs and, if it is rapidly absorbed, so much is eliminated at once that extensive hemorrhages result, with promptly fatal outcome. If absorption occurs slowly, patches of necrosis and inflammation are found in the extremely congested lungs and also degenerative processes in the liver and kidneys. Absorption of benzin from the stomach proceeds very slowly so that when the benzin is exclusively in the stomach it may be possible to wash it out and thorough lavage of the stomach may thus save the victim's life. The amounts that proved fatal varied within wide limits, from a single swallow of benzin to 50 gm. and more.

120. **Secondary Tumors in the Hypophysis and Diabetes Insipidus.**—Simmonds states that in the course of last year, in one Hamburg hospital, he encountered four cases of diabetes insipidus accompanying a secondary tumor in the hypophysis. In two cases the tumor was secondary to mammary cancer, and he urges all to pay attention to the diuresis in case of malignant disease. He thinks it probable that the polyuria in these cases is the result of the loss of hypophysis functioning. Diabetes insipidus cannot be traced to the hypophysis in all cases, but this gland is undoubtedly responsible for it in the majority.

121. **Fistula of the Anus.**—Frey states that since 1896 operative treatment has been given at Krecke's clinic in seventy-two cases of fistula ani. A tuberculous origin was evident in only a very few. Recent reexamination of fifty-six of the patients showed complete incontinence in three cases and partial in ten. These cases teach that the external sphincter should never be completely divided. If this seems indispensable, he advises stopping the radical operation and letting the fistula heal from above downward. It does not affect the continence to divide merely the lower fibers of the external sphincter. He emphasizes the necessity for preventing the development of a fistula when operating on an abscess. In nearly all the cases the fistula dated from an abscess near the rectum, a boil or an abscess which had opened spontaneously or been evacuated by a physician. The patients had long suffered from hemorrhoids or constipation. Frey adds that when only a small incision is made for a large abscess near the rectum, a big cavity is left and a fistula is almost certain to develop. To prevent this, he advises to incise the abscess wall through into the rectum; this, he says, will prevent development of a fistula.

Wiener klinische Wochenschrift, Vienna

January 15, XXVII, No. 3, pp. 41-68

126 *Treatment of Inguinal Hernia. (Zur Bassinischen Operation.) W. Goldschmidt and J. Philipowicz.
127 Mode of Carrying Infants as Factor in Scoliosis. (Ueber das Liegendtragen der Kinder und die Häufigkeit der Linksskoliosen.) G. Engelmann.
128 Malaria with Remarkable Course; Three Cases. W. Ettinger.
129 Perichondritis of the Thyroid Cartilage; Two Cases. V. Frühwald.
130 *Cure of Dysmenorrhea. L. Stolper.

126. **The Bassini Operation for Hernia.**—This communication reviews the outcome after 1,518 operations for inguinal hernia at von Eiselsberg's clinic at Vienna since 1901. About 684 of the patients have been traced to date and recurrence has been found in sixty-five, but it is pointed out that in over a third of the patients in this group the records expressly

stated that the musculature was weak, atrophied or friable. Even when the hernia returned, it never was in a form that permitted incarceration, so that it may be said to have answered its purpose by warding off incarceration even although the bowel protruded a little at the point. On the whole the Bassini operation has stood the test and is regarded as extremely satisfactory except when the tissues are naturally weak or friable. When this is the case a plastic operation should be considered.

130. **Treatment of Dysmenorrhea.**—Stolper has found atropin extremely valuable in curing the tendency to painful menstruation. He explains its efficacy as owing to its relaxing influence when the autonomic nervous system is in a state of hypertonicity. The pronounced spasticity from vagal overstimulation brings on pain at menstruation, and atropin wards this off or cures it. In a certain proportion of the cases, however, it seems absolutely ineffectual; his study of this refractory group showed that they all had one feature in common, namely, an unusually high blood-pressure. He now tests the blood-pressure as a routine measure before giving the atropin; if it is found within normal range, he gives the atropin and can count confidently on the desired response. If the blood-pressure is abnormally high there is no use in giving atropin; treatment must be directed to reducing the blood-pressure, and the cause must be sought and removed. It very frequently is found in the pelvis, a tumor or inflammation in one of the genital organs or chronic constipation causing local disturbance in circulation. When the cause is removed the blood-pressure becomes normal and the dysmenorrhea either is conquered or then becomes amenable to belladonna. The women with dysmenorrhea which can be cured with atropin generally display other signs of vagotony. (See Spitzig's article in THE JOURNAL, Jan. 31, 1914, p. 364.)

Zeitschrift für Kinderheilkunde, Berlin

X, No. 1, pp. 1-80. Last indexed Feb. 7, p. 499

131 The Glycyltryptophan Test in Diagnosis of Normal and Pathological Body Fluids and in Examination of Milk. H. Koch (Chicago).
132 The Primary Lesion in Tuberculosis. (Zur Frage des Primäraffektes bei der Tuberkulose.) P. S. Chancellor (Chicago).
133 Unsatisfactory Increase in the Weight of Breast-Fed Infants Due to Disturbances in Fat Metabolism. (Ueber mangelnde Gewichtszunahme bei jungen Brustkindern.) S. Samelson.
134 Dysentery in Young Children. F. Welbe and T. Schürer.
135 German Measles. (Zur Kenntnis der Rötein.) H. Saito.
136 Treatment of Stenosis of the Pylorus in Infants. A. F. and R. Hess.
137 Relation between Thyroid, Parathyroids and Thymus Shown by Abderhalden's Dialysis. (Das thyreoparathyreo-thymische System und das Abderhaldensche Dialyserverfahren.) G. Singer.

Zentralblatt für Chirurgie, Leipsic

January 31, XLI, No. 5, pp. 185-224

138 *Phenol-Camphor Treatment of Chronic Arthritis. F. Pohl.
139 Temporary Gastrostomy. F. de Quervain and L. Levy.
140 New Common Bile Duct Formed of Engrafted Vein. L. Stropeni and G. Giordano.

138. **Phenol-Camphor Treatment of Chronic Arthritis.**—Pohl warns that the injection must be made only into the joint, never directly into the blood stream or the spongiosa of the bone. He also warns that it is generally better not to make the injection into the small joints on this account. The action of the injection is general, so its effect is felt by the smaller joints. Further experience has convinced him that the alcohol, rather than the camphor, is the important factor, and consequently he has reduced the proportion of camphor since his earlier publications on the subject. His formula now is 30 parts phenol, 10 parts camphor and 30 parts alcohol, and instead of injecting 0.02 c.c. at one point he injects only a fourth or eighth of this dose. The larger amount is necessary, however, for streptococcus processes, and the original formula (see THE JOURNAL, 1913, lxi, 73) is more effectual than the above modification. By using smaller doses and refraining from applying the method to the smaller joints, he thinks there need be no fear of mishaps like the two recently reported by Schulz. He injected 0.05 c.c. of the original formula in the shoulder of a young man and in a few minutes the patient screamed, became unconscious, with convulsions and lockjaw, total arrest of respiration, intense cyanosis and loss of pupil reflexes, but the pulse kept fast and full. The jaws had to be pried open for artificial respiration; under oxygen and heart stimulants the alarming symptoms gradually subsided. The same symptoms were observed also in a second case; this patient was an otherwise healthy man of 54 with a subacute inflammatory process in a deformed foot. About 0.03 c.c. of the original formula was injected, but the trocar evidently got into the spongiosa instead of between the articulating bones, and the same train of symptoms followed as in the first case. It left headache and stupor for some time afterward and disturbance in vision.

Zentralblatt für Gynäkologie, Leipsic

January 31, XXXVIII, No. 5, pp. 193-224

141 The Outlook for Radiotherapy. (Zur Klärung der "Aktinotherapiefrage" bei Karzinom.) E. Bumm.
142 Eclampsia after Removal of Ruptured Uterus at Term. E. Zweifel.
143 Misleading Statistics in regard to Eclampsia. (Zur Schnellentbindung bei der Eklampsie.) F. Lichtenstein.
144 Normal Pregnancy carried to Term with Gauze Sponge in Uterus for Over a Year. K. Kuntzsch.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 8-12, pp. 73-128

145 Intramuscular Cysts after Contusions; Two Cases. A. Mori.
146 Dietary Deficiencies. (Le avitaminosi e loro cura.) Pari.
147 *Peritonitis from Duodenal Ulcer. C. S. Materazzi.
148 Fixation of Wandering Liver. (Distopia del fegato curato con l'epatopessia.) E. Cartolari.

147. **Peritonitis from Duodenal Ulcer.**—A previously healthy man of 29 had a sudden intense pain in the upper left portion of the abdomen, radiating to the lumbar regions, with a sense of oppression in the lower abdomen on both sides. Under salol all disturbances subsided in six days and the patient supposed he was entirely cured. Five months later the sense of oppression returned, followed by pain on both sides, which yielded anew to drugs, but returned in an aggravated form after two months, with blood in the stools and general depression. There was a dull ache in the lower quadrants of the abdomen, extending upward on the left with tenderness. Only the assumption of peritonitis would explain these symptoms and the gradual increase in the girth. The dragging course had a depressing influence so that the patient begged for an operation, and this revealed an unsuspected duodenal ulcer as the source of the trouble. There had never been any vomiting, tardy local pain in the epigastric region after eating, or any spreading of the pain toward the right—so that duodenal mischief had been erased from the probabilities.

Policlinico, Rome

January 25, XXI, No. 4, pp. 113-148

149 Sodium Chlorid in Kidney Disease. (Intorno all'azione del cloruro di sodio sui reni normali e patologici.) C. Longo.

January, Surgical Section No. 1, pp. 1-52

150 Experimental Intrathoracic Surgery, Aside from the Heart. O. Uffreduzzi.
151 *Plastic Operations on the Vas Deferens. (Innesti sul deferente.) A. Pignatti. Commenced in preceding volume.
152 Attempt to Transplant Part of Shoulder. (Tentativo di omo-necrotrapianto emiarticolare della meta prossimale dell'omero eseguito in un caso di resezione dell'estremita superiore dell'omero per sarcoma.) G. Serafini.
153 Resection of Optic Nerve for Tumor in its Sheath, Retaining the Eyeball. E. Bartolotta.
154 *Osteogenetic Action of Osmic Acid. M. Segrè.
155 Osteofibroma of Upper Jaw. U. Camera.

151. **Plastic Operations on the Vas Deferens.**—Pignatti reports success in eight of eleven experiments in this line, including five autoplastic operations. The vas deferens was restored and became permeable and continent. The results were more satisfactory when the stumps of the vas deferens were invaginated in the implanted segment of artery or vein rather than when the segment was implanted by direct anastomosis. The stumps of the vas deferens proliferated until there was an epithelial lining throughout the graft.

154. **Effect of Osmic Acid on Bone Production.**—Segrè had his attention attracted to this subject by the remarkable effect of local injection of osmic acid in a case of ununited

fracture of the leg. It had obstinately refused to heal under the usual measures perseveringly applied for six months. Roentgenoscopy confirmed the lack of consolidation in both tibia and fibula. Then 0.02 c.c. of osmic acid in a 1 per cent. solution was injected directly into the focus. There was not much pain from it or local reaction but the temperature rose a trifle. The injection was repeated to a total of four times in fifteen days and the fracture rapidly consolidated so that the patient was discharged two weeks later. Segrè then experimented on twelve rabbits, injecting osmic acid into the focus of a fracture, the results confirming the assumption that osmic acid has a decided stimulating action on the periosteum and the bone marrow. He does not think that it starts an actual process of ossification, but it induces inflammation which modifies conditions and starts the cellular elements to hyperfunctioning. In his experiments the gaps filled up with an exuberant growth and the marrow canal at some points seemed narrower.

Riforma Medica, Naples

January 3, XXX, No. 1, pp. 1-28

156 Cardioptosis. (Morbo di Rummo.) E. de Renzi.
157 Variations in the Osmotic Pressure and the Viscosity of the Blood after Removal of Adrenals of Animals. G. Scala.
158 Diffuse Abdominal Sarcoma. N. Camillo.
159 The Knee-Chest Position in Heart Disease. (Segno di Hirtz.) A. Delle Piane.

January 10, No. 2, pp. 29-56

160 Ileus from Jackson's Membrane and Movable Kidney. D. Taddei.

January 17, No. 3, pp. 57-84

161 *The Regeneration of Elastic Fibers in Artery Wounds in Connection with the Suture Material and the Functional Factors. (Contributo sperimentale alla meccanomorfosi in Patologia.) L. Caforio.
162 Colloidal Degeneration of the Ovary. (Struma ovarico colloideo.) N. Glanocttasio. Commenced in No. 2.

161. **The Suture Material as Aid in Healing of Wounds.**—Caforio relates experiments on fourteen dogs which fail to show that the suture material has any influence on the regeneration of the elastic fibers after incision of a blood-vessel. Regeneration proceeds rapidly when the blood courses approximately normally through the vessel, while a thrombosed vessel displays but slight tendency to regeneration. The outcome thus depends on whether the permeability of the vessel is restored or not.

Rivista Ospedaliera, Rome

January 15, IV, No. 1, pp. 1-64

163 The Pathology of Alcoholism. E. Marchiafava.
164 The Danger from Lumbar Puncture with Fracture at Base of Skull G. Giorgi.

Brazil-Medico, Rio de Janeiro

January 1, XXVIII, No. 1, pp. 1-10

165 The Behavior of the Treponema Gallinarum at Low Temperatures. A. Neiva.

Semana Medica, Buenos Aires

January 1, XXI, No. 1, pp. 1-56

166 Nystagmus in Febrile States. C. B. Udaondo.
167 Congenital Absence of the Fibula. (Ausencia congenita del peróne.) R. A. Rivarola.
168 Hygiene of the Scalp of Schoolchildren. J. V. Uriburu.
169 How to Prevent Infanticide. (El infanticidio y el torno hórc.) A. D'Alessandro. (Puericultura intra y extrauterina.) E. Canton.

Meditsinskoe Obozrienie, Moscow

LXXX, No. 18, pp. 553-650

170 *Gastric Sarcoma. O. Melikianz.
171 *Modern Methods of Treatment of Hypertrophy of the Prostate, and Results. S. Kubasheff.
172 *Syphilitic Optic Neuritis. V. Odinzoff.

No. 19, pp. 651-750

173 Artificial Serum in Treatment of Arteriosclerosis. S. Malkoff.
174 Cancer Plus Tuberculosis of the Uterus. V. Baldovsky.
175 Myeloblastic Myeloma. A. Krulkoff.

170. **Gastric Sarcoma.**—Sarcoma of the stomach, according to the statistics from German clinics, forms 1 per cent. of all cases of gastric tumors. According to Melikianz, it cannot be positively differentiated from carcinoma of the stomach. With sarcoma there may likewise be vomiting, pain, anemia, enlarged spleen and lack of HCl or only traces. Lymphocytosis is held by some to be characteristic for sarcoma of the stomach. In Melikianz' case the tumor was diffuse, occupying the wall of the stomach from the cardia to the pylorus, the mucosa having been preserved. The patient was a man of 25; he presented the above mentioned symptoms, but the course after the symptoms developed was very rapid, about two months. There was no vomiting until twelve days before death. The operation showed inoperable conditions and the post-mortem revealed that the sarcoma involved also the neighboring organs, the duodenum, gall-bladder, pancreas, transverse colon, diaphragm and mesentery.

171. **Enlarged Prostate.**—Rubasheff discusses from extensive and elaborate study of the literature the different methods of treatment of prostatic hypertrophy. He considers the most efficient method to be the removal of the prostate. The suprapubic method is indicated when the hypertrophy affects the middle portion of the gland, which then has a tendency to grow toward the bladder, in not very old people, with the urine in good condition. The perineal route is perferable when the lateral lobes of the prostate are hypertrophied, and protrude toward the rectum, and when the prostate shows signs of malignant degeneration in debilitated patients with abnormal urine. If urethroscopic examination shows local lesions, then Goldschmidt's or Young's operations are to be recommended; they are merely modifications of the old Bottini operation. In case none of these operations can be performed, the so-called palliative methods can be used, Roentgen-ray treatment of the testicles or prostate itself, catheterization, etc. His tables comparing the results of the different technics as reported by various surgeons list thousands of cases.

172. **Syphilitic Optic Neuritis.**—This is an extremely rare occurrence as an independent morbid lesion. Uthoff saw it only fourteen times in acquired and three times in hereditary syphilis among 80,000 patients. Odinzoff reports two cases in which syphilis was the only cause and in which the only sign was this neuritis. It cleared up in both under mercury and iodid. As a rule, the primary syphilitic neuritis involves both eyes (in 60 per cent. of cases), males more often than females, and occurs mostly in acquired syphilis and in the early stages, from one to three years after the infection, though it has been known even twenty years after the primary chancre. The anatomic changes consist in peripheral interstitial perineuritis or neuritis, especially of the posterior portion of the nerve; rarely they consist in retrobulbar neuritis (normal fundus, central scotoma and normal fields of vision), and even gummata may occur in the optic nerve and may involve the papilla itself.

Hospitalstidende, Copenhagen

January 28, LVII, No. 4, pp. 97-128

176 *Stomach Functioning in Exophthalmic Goiter. (Undersøgelser over Ventrikelfunktionen hos Patienter med Mb. Basedow.) V. F. Møller.

176. **The Stomach with Exophthalmic Goiter.**—Møller remarks that Wolpe is the only one he knows of who has made a systematic study of the stomach functioning in Basedow's disease. He examined sixteen patients and had most of them under supervision up to three years. Møller here reports similar research on twenty-four patients with exophthalmic goiter. He found achylia constant in all the cases of the pronounced classic type of the disease, and that the achylia was marked from the very beginning of the Basedow. On the other hand, when even one of the classic triad of symptoms was lacking, the secretion of hydrochloric acid did not seem to be modified. All this material is tabulated under twenty-eight headings. The classic triad was presented by seventeen and achylia was the rule in all this group. Wolpe ascribes the achylia to the toxic action of the Basedow poison on the nerves of the stomach, but Møller thinks the evidence speaks as much for assumption of a chronic gastritis as for a nervous achylia. In a still more recent case, a young woman entered the hospital for digestive disturbances, vomiting, achylia and diarrhea. There were no signs of exophthalmic goiter but during the month she was in the hospital, symptoms of exophthalmic goiter developed, gradually progressing since. Her stomach had given her trouble for five or six years.

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